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Final

December 1989

Oregon Wilderness

Environmental Impact Statement

Volume I - Statewide

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As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

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In Memory of

Craig Galbraith
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Who died in an airplane crash at the head of Little Blitzen Gorge on Steens Mountain on August 21, 1986, while conducting a BLM Wilderness Review.

"The wilderness and solitary place
shall be glad for them;
and the desert shall rejoice,
and blossom as the rose."

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Dear Reader:

Enclosed is your copy of the Final Environmental Impact Statement (FEIS) prepared on the Oregon statewide wilderness study recommendations. The statement analyzes the impacts that would result from the proposed action and alternatives. The purpose of the statement is to disclose the probable environmental impacts and to ensure that those impacts are considered along with economic, technical and other factors in the decisionmaking process.

This document analyzes proposed recommendations and alternatives for the 85 wilderness study areas located primarily in eastern Oregon. The Final EIS will be submitted to the Secretary of the Interior along with a statewide report, site-specific reports on each area, and minerals information prepared by the U.S. Geological Survey and the Bureau of Mines. The statewide wilderness study report will include my final recommendation for each area, which will consider this FEIS information, the mineral survey reports and the results of a planning consistency review of the proposed action by the Governor of Oregon. The Secretary will review this information and then make recommendations to the President of the United States in 1991. The President, in turn, will submit recommendations to Congress. Only Congress can decide which areas are to be designated as wilderness.

Since 1978, the Bureau of Land Management (BLM) has been studying the wilderness potential of the public lands. During this time, we have held many public meetings and we have requested your input on numerous documents. On behalf of the BLM, I want to thank you for the time and effort you took to participate in this study. BLM staff and managers have carefully read and listened to all comments throughout this process. Your input to this study has helped us formulate, revise and refine our proposals. Once again, thank you for your participation.

Sincerely,

D. Dean Bibles

D. Dean Bibles
State Director

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U.S. Department of the Interior
Bureau of Land Management

Final

Oregon Wilderness

Environmental Impact Statement

Volume I - Statewide

Prepared by
U.S. Department of the Interior
Bureau of Land Management

December 1989

State Director
Oregon/Washington State Office

Oregon Wilderness Environmental Impact Statement

Draft ( ) Final (X) EIS
Lead Agency: Department of the Interior, Bureau of Land Management

Cooperating Agency: Department of Agriculture, U. S. Forest Service

A. Type of Action: Administrative ( )
Legislative (X)

B. Abstract: The Bureau of Land Management (BLM) proposes to recommend that 1,128,850 acres in 48 wilderness study areas (WSAs) are suitable for wilderness designation and 1,529,547 acres are nonsuitable for wilderness designation. The 85 WSAs analyzed are located primarily in eastern Oregon. This document analyzes the environmental consequences of the proposal and six alternatives ranging from all wilderness to no wilderness for the 85 WSAs. It also documents the wilderness study analysis with respect to the BLM planning criteria and quality standards used for determining suitability or nonsuitability for wilderness designation of public lands.

C. The seven alternatives analyzed are:

1. All Wilderness
2. Wilderness Emphasis
3. Conflict Resolution Emphasis
4. Ecosystem Diversity Emphasis
5. Proposed Action
6. Commodity Development Emphasis
7. No Wilderness/No Action

D. For further information, contact:

Jerry Magee, EIS Team Leader
Bureau of Land Management
Oregon-Washington
State Office (OR935)
P.O. Box 2965
Portland, Oregon 97208
Telephone (503) 231-6867

Summary

The Oregon Wilderness EIS has been prepared pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA 1969) and the Council on Environmental Quality (CEQ) Regulations and in conformance with Section 603 of the Federal Land Policy and Management Act (FLPMA 1976) and the BLM Wilderness Study Policy (1982).

The Draft Oregon Wilderness EIS (DEIS) was published April 30, 1985, with a public comment period ending on August 31, 1985. The document addressed wilderness suitability and nonsuitability alternatives for 77 wilderness study areas (WSAs) totaling 2,304,142 acres.

The Supplement to the Oregon Wilderness DEIS was published on January 21, 1987, with a comment period ending on April 24, 1987. The Supplement considered additional lands that were restored or added to WSA status, bringing the total number of WSAs studied in the EIS to 85.

This Final EIS (FEIS) analyzes wilderness designation and non-designation alternatives for the 85 WSAs totaling 2,652,234 acres. The 85 WSAs, along with their acreages, are listed in Table 1-1 in Chapter 1.

Alternatives Analyzed in the EIS

Up to five alternatives were analyzed for each WSA in the EIS appendices. All appendices analyzed at least alternatives 1 and 4 of the following:

1. All Wilderness (Entire WSA recommended suitable for wilderness designation.)

2. Enhanced Wilderness (Opportunities to enhance wilderness manageability considered.)

3. Partial (Opportunities to resolve or minimize resource conflicts considered.)

4. No Wilderness/No Action (Current levels of use and management continued.)

5. Proposed Action (Usually one of the four preceding alternatives, but in some cases different from all of them.)

For the entire state, the following alternatives were analyzed (acres recommended suitable and nonsuitable for wilderness designation are identified in parentheses; the suitable and nonsuitable acreages shown for alternatives 2 through 6 add up to more than the total WSA acreage in the EIS due to the addition of public lands outside some of the WSAs in the suitable recommendations):

1. All Wilderness (suitable: 2,652,234 acres; nonsuitable: 0 acres). This alternative recommends designation of all of every WSA as wilderness.

2. Wilderness Emphasis (suitable: 2,350,142 acres; nonsuitable: 332,865 acres). This alternative emphasizes wilderness values over competing resource values.

3. Conflict Resolution Emphasis (suitable: 1,242,478 acres; nonsuitable: 1,413,186 acres). This alternative is designed to moderate conflicts between wilderness designation and other values.

4. Ecosystem Diversity Emphasis (suitable: 1,243,999 acres; nonsuitable: 1,414,398 acres). Suitable recommendations under this alternative are designed to provide representation of all of the ecosystems identified in the Oregon Natural Heritage Plan that fall within Oregon WSAs.

5. Proposed Action (suitable: 1,128,850 acres; nonsuitable: 1,529,547 acres). This alternative recommends designation of areas considered to be appropriate additions to the NWPS, considering both their wilderness values and enhancement opportunities, as well as conflicts which could be created by such designations.

6. Commodity Development Emphasis (suitable: 381,413 acres; nonsuitable: 2,273,321 acres). This alternative is designed to recommend no areas for designation that would preclude potentially significant commodity production.

7. No Wilderness/No Action (suitable: 0 acres; nonsuitable: 2,652,234 acres). This alternative recommends continuation of current levels of use and management and implementation of existing planning decisions.

Environmental Consequences of the Proposed Action

Impacts on Wilderness Values

Wilderness designation of 1,138,573 acres (assuming acquisition of full fee estate lands totaling 9,723 acres and the addition of 6,163 acres of non-WSA public lands) would protect and enhance existing wilderness values. The additional acquisition of 41,105 acres of mineral estate and closure of 96 miles of roads would further preserve wilderness values. Within the 1,529,547 acres not designated wilderness, projected activities would both directly and indirectly impair wilderness values over approximately 521,400 acres with probable further declines from other unforeseen actions over the long term. Two Bailey-Kuchler ecosystems not currently represented in the National Wilderness Preservation System (NWPS) would be added to the system.

Impacts on Energy and Mineral Development

Withdrawal of 1,112,073 acres to mineral entry from wilderness designation would result in foregone production from 12 projected oil and gas wells, one projected geothermal powerplant (totaling 20 megawatts), and 21 projected mine sites for metallic and non-metallic minerals. Projected development of 23 oil and gas wells, five geothermal powerplants (totaling 60 megawatts), and 36 metallic and non-metallic mines would occur.

Impacts on Watershed

Watershed conditions would improve on 166 miles of perennial streams and be degraded on 14 miles, with approximately 360 miles of perennial streams remaining in their current condition.

Impacts on Vegetation

Vegetation alteration would occur on 108,440 acres; vegetation would be removed from 42,550 acres, and 650 acres would revegetate. Riparian vegetation would improve on 193 miles and would decline on 12 miles of streams. Residual ground cover would decrease in 24 WSAs due to livestock use increases and would increase in three WSAs due to livestock use reductions. Projected actions in eight WSAs would potentially threaten the habitat of plant species of special interest.

Impacts on Wildlife

Wildlife habitat would be protected on 1,128,850 acres designated wilderness. Habitat change or reduction would occur on 150,990 acres. A total of 193 miles of riparian habitat would be improved, while 12 miles would be degraded. Projected actions in nine WSAs would potentially threaten habitat or populations of special status species.

Impacts on Livestock Grazing

Livestock would be managed at the estimated overall level of 188,637 Animal Unit Months (AUMs) in the WSAs. Current use would increase by 15,707 AUMs in 18 WSAs from projects and by allocation of 19,966 AUMs currently available in 11 WSAs. Use would decrease by a total of 324 AUMs in three WSAs.

Impacts on Utility Corridor Routing

No substantial shifts in the proposed 500-kV utility corridors would occur.

Impacts on Wood Products Harvest

An average annual timber yield of approximately 154 thousand board feet (Mbf) would be foregone as a result of wilderness designation. Annual harvest of approximately 156 Mbf in four WSAs would be realized.

Impacts on Cultural and Paleontological Resources

Projected actions in two WSAs would potentially threaten known cultural sites. No actions are projected to occur in the vicinity of known paleontological sites.

Impacts on Recreation Use

Overall recreation use of the WSAs would amount to approximately 144,770 visitor days per year. Annual recreation use would increase by a total of 20,020 visitor days in 22 WSAs and would decrease by a total of 10,550 visitor days in 18 WSAs, with no significant change in use levels anticipated in the remainder of the WSAs.

Impacts on Local Personal Income

Annual local personal income generated from resource outputs in the WSAs would increase by approximately $496,000.

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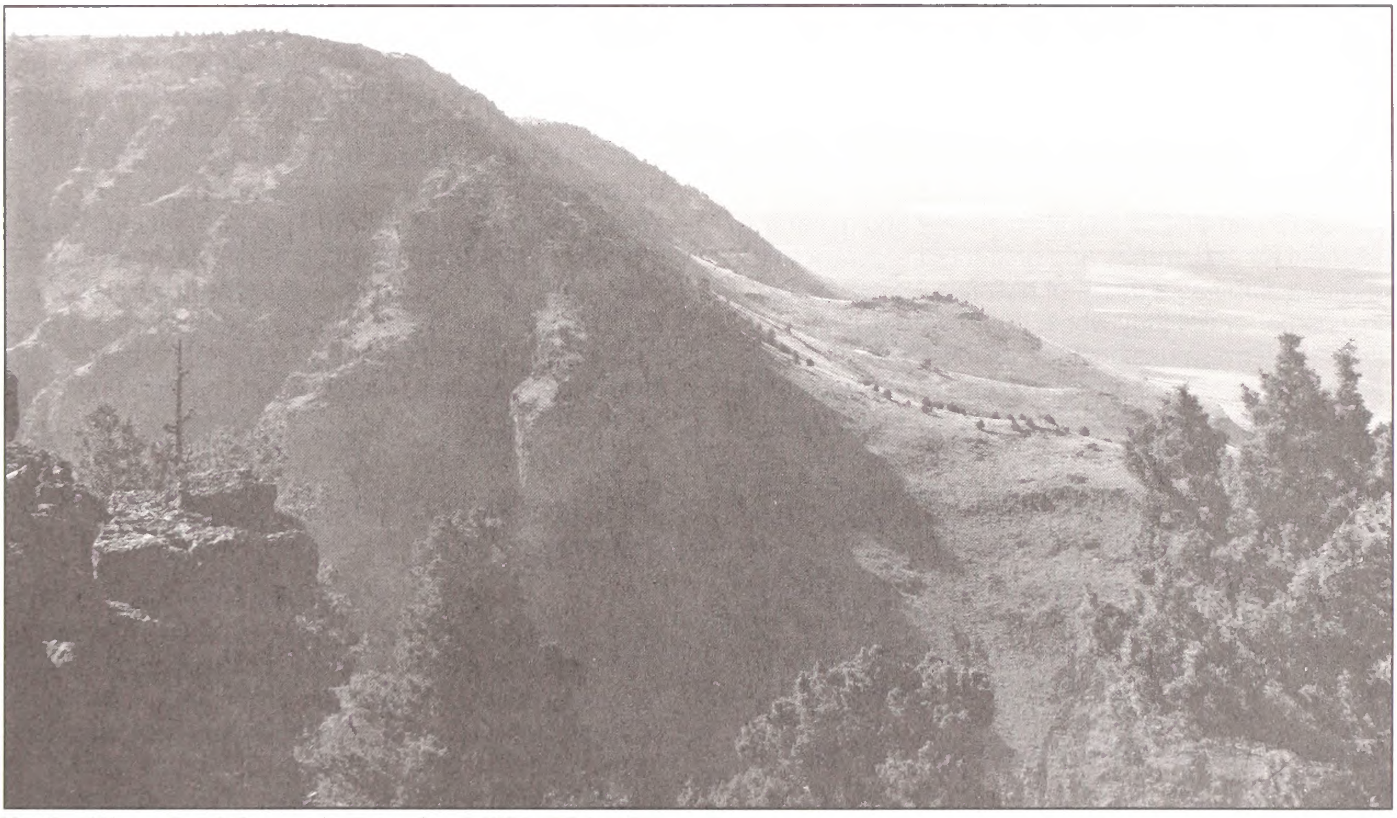

Mouth of Home Creek Canyon in Home Creek WSA (OR-2-85H)

Introduction

The Draft Oregon Wilderness Environmental Impact Statement (DEIS) was released for public review on April 30, 1985. The document examined wilderness suitability and nonsuitability alternatives for 77 Wilderness Study Areas (WSAs) totaling 2,304,142 acres. The comment period ended August 31, 1985.

The Supplement to the DEIS (SDEIS) considered additional lands that were restored or added to WSA status, bringing the total of WSAs studied in the DEIS to 85. It was published on January 21, 1987, with a comment period ending on April 24, 1987.

This Final EIS (FEIS) analyzes wilderness designation and non-designation alternatives for the 85 WSAs totaling 2,652,234 acres.

Changes Between SDEIS and FEIS

Changes between the Supplement to the Draft EIS and this Final EIS involve the format, content and the recommendations analyzed in the document.

The Environmental Consequences Chapter (Chapter 4) of the Statewide Volume has been reformatted by Statewide Alternative, with individual resource topics discussed under each. The individual appendices are now formatted by numbered section headings, with detailed management action discussions appearing in Section 2, Description of the Alternatives.

These management action descriptions in the appendices represent the major content revision in the EIS. The DEIS and SDEIS identified energy and mineral potential for occurrence and presented livestock and wildlife actions as a range of possible actions based on whether or not they would be allowed to occur under wilderness designation. In this FEIS, all management actions are portrayed, for analysis purposes, as actions projected to occur in the foreseeable future based on resource potentials and current conditions and trends, including such factors as economics, resource demands and Federal, State and local laws and policies. These projections include scenarios for energy and mineral development in the WSAs and predictions as to whether or not a projected activity would be allowed under wilderness designation. Projections of resource uses in the WSAs are further described in Chapter 2, under the Summary of Projected Management Under Each Alternative section.

Some changes to the suitability recommendations, primarily in the Proposed Action, have occurred between the SDEIS and this FEIS. These changes result in a net increase in the acreage recommended suitable for wilderness designation in the Proposed Action from 1,000,508 acres to 1,128,850 acres. Revised recommendations were based on consideration of the public comments received in approximately 3,000 letters and oral testimonies on both the DEIS and Supplement and on new information gained since the Supplement. A listing of acres recommended suitable in this Final EIS appears in Table 2-3 in Chapter 2, while detailed descriptions of FEIS proposed actions for each WSA are included in the site-specific appendices to this Statewide Volume.

General Location

The area considered in the Oregon Wilderness Environmental Impact Statement (EIS) includes 85 wilderness study areas totaling 2,652,234 acres (see table 1-1) and some additional public land adjacent to some of the WSAs that is considered for wilderness designation in at least one alternative. The WSAs are located primarily in eastern Oregon with the greatest concentration in southeastern Oregon (see map 1).

Two Nevada WSAs located along the Oregon/Nevada border and one Idaho WSA along the Oregon/Idaho border are included in this study and incorporated into the adjoining Oregon WSAs. Nevada's Pueblo Mountains (NV-020-642) and Disaster Peak (NV-020-859) WSAs are being studied as part of Oregon's Pueblo Mountains (OR-2-81) and Disaster Peak (OR-3-153) WSAs, respectively. Idaho's Lookout Butte (ID-16-48A) is being studied as a part of Oregon's Lookout Butte WSA (OR-3-194). In addition, the U.S. Forest Service's Homestead Further Planning Area is similarly included in the study of BLM's Homestead WSA (OR-6-2) in accordance with the 1981 USFS/BLM Cooperative Agreement for joint wilderness studies, and a small parcel of USFS-administered land is being studied as part of BLM's North Fork WSA (OR-5-31).

Purpose of and Need for Action

The Federal Land Policy and Management Act of l976 (FLPMA) directs BLM to manage the public lands and their resources under principles of multiple use and sustained yield. FLPMA identifies wilderness values as part of the spectrum of public land resource values and uses to be considered in BLM's planning, inventory and management activities. Section 603 of

Table 1-1. Wilderness Study Areas in the Oregon Wilderness EIS

WSA No. (OR-)	WSA Name	Acres BLM	Acres Other Federal	Total Acres
1-2	Devils Garden Lava Bed	29,680		29,680
1-3	Squaw Ridge Lava Bed	28,340		28,340
1-22	Four Craters Lava Bed	12,600		12,600
1-24	Sand Dunes	16,440		16,440
1-58	Diablo Mountain	113,120		113,120
1-78	Orejana Canyon	24,600		24,600
1-101	Abert Rim	23,760		23,760
1-117	Fish Creek Rim	16,690		16,690
1-132	Guano Creek	10,350		10,350
1-139	Spaulding	69,530		69,530
1-146A	Hawk Mountain	69,640		69,640
1-146B	Sage Hen Hills	8,520		8,520
2-14	Malheur River-Bluebucket Creek	5,560		5,560
2-23L	Stonehouse	21,325		21,325
2-23M	Lower Stonehouse	8,090		8,090
2-72C	Sheepshead Mountains	54,390		54,390
2-72D	Wildcat Canyon	34,830		34,830
2-72F	Heath Lake	20,520		20,520
2-72I	Table Mountain	40,592		40,592
2-72J	West Peak	8,535		8,535
2-73A	East Alvord	22,240		22,240
2-73H	Winter Range	15,440		15,440
2-74	Alvord Desert	251,060		251,060
2-77	Mahogany Ridge	27,940		27,940
2-78	Red Mountain	16,215		16,215
2-81	Pueblo Mountains	72,690[1]		72,690
2-82	Rincon	103,965		103,965
2-83	Alvord Peak	16,825		16,825
2-84	Basque Hills	141,410		141,410
2-85F	High Steens	69,740		69,740
2-85G	S. Fk. Donner und Blitzen River	37,555		37,555
2-85H	Home Creek	26,590		26,590
2-86E	Blitzen River	55,880		55,880
2-86F	Little Blitzen Gorge	9,400		9,400
2-87	Bridge Creek	14,545		14,545
2-98A	Pine Creek	200		200
2-98C	Sheep Gulch	741		741
2-98D	Indian Creek	208		208
2-103	Aldrich Mountain	9,395		9,395
3-18	Castle Rock	6,200		6,200
3-27	Beaver Dam Creek	19,580		19,580
3-31	Camp Creek	19,200		19,200
3-32	Cottonwood Creek	8,700		8,700
3-33	Gold Creek	13,600		13,600
3-35	Sperry Creek	5,600		5,600
3-47	Cedar Mountain	33,600		33,600
3-53	Dry Creek	23,500		23,500
3-56	Dry Creek Buttes	51,800		51,800

Table 1-1. Wilderness Study Areas in the Oregon Wilderness EIS (continued)

WSA No. (OR-)	WSA Name	Acres BLM	Acres Other Federal	Total Acres
3-59	Owyhee Breaks	13,380		13,380
3-73	Blue Canyon	12,700		12,700
3-74	Upper Leslie Gulch	3,000		3,000
3-75	Slocum Creek	7,600		7,600
3-77A	Honeycombs	39,000		39,000
3-77B	Wild Horse Basin	12,100		12,100
3-110	Lower Owyhee Canyon	75,700		75,700
3-111	Saddle Butte	86,300		86,300
3-114	Palomino Hills	54,600		54,600
3-118	Bowden Hills	59,900		59,900
3-120	Clarks Butte	31,490		31,490
3-128	Jordan Craters	27,900		27,900
3-152	Willow Creek	30,565		30,565
3-153	Disaster Peak	32,040[2]		32,040
3-156	Fifteenmile Creek	51,290		51,290
3-157	Oregon Canyon	42,900		42,900
3-162	Twelvemile Creek	28,600		28,600
3-173	Upper West Little Owyhee	62,500		62,500
3-194	Lookout Butte	99,600[3]		99,600
5-1	Thirtymile	7,538		7,538
5-6	Lower John Day	19,587		19,587
5-8	North Pole Ridge	6,369		6,369
5-9	Spring Basin	5,982		5,982
5-21	Badlands	32,221		32,221
5-31	North Fork	10,985	1,125	12,110
5-33	South Fork	19,631		19,631
5-34	Sand Hollow	8,791		8,791
5-35	Gerry Mountain	20,700		20,700
5-42	Hampton Butte	10,600		10,600
5-43	Cougar Well	18,435		18,435
6-1	McGraw Creek	497		497
6-2	Homestead	6,921	7,654	14,655
6-3	Sheep Mountain	7,040		7,040
11-1	Mountain Lakes	334		334
11-17	Soda Mountain	5,640		5,640
12-8	North Sisters Rock	3		3
12-14	Zwagg Island	5		5
	TOTAL	**2,643,455**	**8,779**	**2,652,234**

[1] Includes 600 acres in Nevada's Pueblo Mountains WSA (NV-020-642)
[2] Includes 13,200 acres in Nevada's Disaster Peak WSA (NV-020-859)
[3] Includes 34,400 acres in Idaho's Lookout Butte WSA (ID-16-48A)

FLPMA specifically directs BLM to carry out a wilderness review of roadless islands and roadless areas of 5,000 acres or more of public land and to recommend to the President whether each such area or island is suitable or nonsuitable for preservation as wilderness. The President will then make recommendations to Congress. Areas will be designated wilderness only by an act of Congress. The purpose of the recommendations analyzed in this EIS is to carry out this mandate of FLPMA.

Format of the EIS

This EIS comprises two types of documents.

An EIS appendix has been prepared for each wilderness study area or for a set of study areas. A set of study areas is included in a single appendix where at least one of the alternatives considers merging them into a single wilderness area. Also, the two island WSAs are addressed in a single appendix, because of their similarity and small size. The Strawberry Mountain WSAs are similarly addressed in one appendix. Each appendix describes the study area(s) and analyzes the environmental consequences of a range of wilderness and nonwilderness alternatives.

The statewide volume assesses the environmental consequences from a statewide perspective by analyzing an array of statewide alternatives incorporating all WSA-specific alternatives addressed in the appendices. A range of alternatives, extending from recommendation of all of the areas for wilderness designation to recommendation of none of them, is considered in the EIS.

Wilderness Review Process

The 85 wilderness study areas (WSAs) analyzed in this EIS were identified during the wilderness inventory, the first of three steps in the wilderness review. The inventory process is described in the Wilderness Inventory Handbook (1978). In the inventory, roadless areas and islands were designated WSAs if they met the definition of wilderness in Section 2(c) of the Wilderness Act. The inventory began in 1978 and was completed at various dates for different WSAs. The original inventory phase ended in 1981. The resulting WSAs are described in four inventory reports:

- Final Decisions on the Intensive Wilderness Inventory of Public Lands Along the Proposed Route of the Alaska Natural Gas Transportation System (February 1980).

- Wilderness Review - Intensive Inventory: Final Decisions on 30 Selected Units in Southeast Oregon and Proposed Decisions on Other Intensively Inventoried Units in Oregon and Washington (March 1980).

- Wilderness Inventory - Oregon and Washington: Final Intensive Inventory Decisions (November 1980).

- Stateline Intensive Wilderness Inventory Final Decisions: Oregon-Idaho-Nevada-Utah (November 1981).

The study areas and the acres of land in each area are listed in table 1-1.

The next step in the wilderness review process is the wilderness study. The analysis in the draft EIS, the Supplement and this final EIS is a part of the study. During the study phase, the benefits of preserving a WSA's wilderness values are compared with the benefits of managing the area for other purposes, such as development of minerals and intensive range development. The outcome of this weighing and balancing is a set of preliminary recommendations by the BLM State Director as to which areas are recommended for wilderness designation.

The wilderness planning criteria and quality standards used to arrive at the preliminary wilderness suitability and nonsuitability recommendations are described in the Wilderness Study Policy, published in the Federal Register on February 3, 1982. Copies of the study policy can be obtained from the BLM Oregon State Office or from any district office which manages WSAs.

BLM district managers began the wilderness study by comparing the benefits of wilderness and nonwilderness management in a series of land use plans. The land use plans used in the study in Oregon are called management framework plans (MFPs). In some cases, new MFPs were prepared; whereas in others, existing MFPs were amended. The names of the MFPs or MFP amendments that address the WSAs, and the dates they were completed, are listed in table 1-2.

BLM held 25 public meetings to discuss alternatives considered in the MFPs and MFP amendments. After consideration of public comments, the district managers concluded the land use planning and submitted their preliminary wilderness suitability and nonsuitability recommendations to the State Director.

With the receipt of the preliminary recommendations, work began on the draft EIS. Fourteen public meetings were held across the state between

Table 1-2. Management Framework Plans (MFPs) and MFP Amendments (MFP-As) Involving the WSAs

MFP or MFP-A Name	Date Completed	District	WSAs Involved (OR-)
Brothers	1982	Prineville	5-21, Badlands
			5-31, North Fork
			5-33, South Fork
			5-34, Sand Hollow
			5-35, Gerry Mountain
			5-42, Hampton Butte
			5-43, Cougar Well
Andrews	1982	Burns	1-146A, Hawk Mountain [1]
			1-146B, Sage Hen Hills[1]
			2-14, Malheur R.-Bluebucket Creek[1]
			2-23L, Stonehouse[1]
			2-23M, Lower Stonehouse
			2-77, Mahogany Ridge
			2-78, Red Mountain
			2-81, Pueblo Mountains
			2-82, Rincon[1]
			2-83, Alvord Peak
			2-84, Basque Hills[1]
			2-85F, High Steens
			2-85G, South Fork of the Donner und Blitzen
			2-85H, Home Creek
			2-86E, Blitzen River
			2-86F, Little Blitzen Gorge
			2-87, Bridge Creek
Northern Malheur Amendment	1982	Vale	3-18, Castle Rock
			3-27, Beaver Dam Creek
			3-31, Camp Creek
			3-32, Cottonwood Creek
			3-33, Gold Creek
			3-35, Sperry Creek
			3-47, Cedar Mountain
			3-53, Dry Creek
			3-56, Dry Creek Buttes
			3-59, Owyhee Breaks[1]
			3-73, Blue Canyon
			3-74, Upper Leslie Gulch
			3-75, Slocum Creek
			3-77A, Honeycombs
			3-77B, Wild Horse Basin
Southern Malheur	1982	Vale	3-110, Lower Owyhee Canyon [1]
			3-111, Saddle Butte
			3-114, Palomino Hills
			3-118, Bowden Hills
			3-120, Clarks Butte
			3-128, Jordan Craters[1]
			3-152, Willow Creek[1]
			3-153, Disaster Peak[1]
			3-156, Fifteenmile Canyon
			3-157, Oregon Canyon
			3-162, Twelvemile Canyon
			3-173, Upper West Little Owyhee
			2-72C, Sheepshead Mountains[1]
			2-72D, Wildcat Canyon[1]
			2-72F, Heath Lake[1]
			2-72I, Table Mountain[1]
			2-72J, West Peak[1]
			2-73A, East Alvord[1]
			2-73H, Winter Range[1]
			2-74F, Alvord Desert[1]

Table 1-2. Management Framework Plans (MFPs) and MFP Amendments (MFP-As) Involving the WSAs (continued)

MFP or MFP-A Name	Date Completed	District	WSAs Involved (OR-)
High Desert Amendment[2]	1983	Lakeview	1-2, Devils Garden Lava Bed 1-3, Squaw Ridge Lava Bed 1-22, Four Craters Lava Bed 1-24, Sand Dunes 1-58, Diablo Mountain
Warner Lakes Amendment[2]	1983	Lakeview	1-78, Orejana Canyon 1-101, Abert Rim[1] 1-117, Fish Creek Rim 1-132, Guano Creek 1-139, Spaulding
John Day Amendment[2]	1983	Burns	2-98A, Pine Creek 2-98C, Sheep Mountain 2-98D, Indian Creek 2-103, Aldrich Mountain
Baker Amendment[2]	1983	Vale	6-1, McGraw Creek 6-2, Homestead 6-3, Sheep Mountain
John Day River Amendment[2]	1983	Prineville	5-1, Thirtymile 5-6, Lower John Day 5-8, North Pole Ridge 5-9, Spring Basin
Jackson-Klamath Amendment[2]	1983	Medford	11-1, Mountain Lakes 11-17, Soda Mountain
South Coast-Curry Amendment[2]	1983	Coos Bay	12-8, North Sisters Rocks 12-14, Zwagg Island

[1] Part or all of this WSA is in an adjacent planning area, but the wilderness study is included in the planning document indicated in this table.
[2] Alternative wilderness suitability and nonsuitability recommendations for WSAs in this MFP amendment were described in a December 1982 publication, "Wilderness Studies - Management Framework Plan Amendments: Summary of Land Use Alternatives."

December 1982 and March 1983 to identify issues and alternatives which the public felt should be analyzed in the EIS. After scoping, the district managers and State Director selected the preferred alternative for the draft EIS. Among the information they considered were the district managers' preliminary recommendations, information on energy and mineral potential received after the MFPs and MFP amendments were completed, and the extent to which designation of the WSAs as wilderness would increase the diversity of units of the National Wilderness Preservation System.

The draft EIS was released for public review on April 30, 1985. Fifteen public hearings on the DEIS were held throughout Oregon, in Boise, Idaho, and in Reno, Nevada in June and July 1985. The comment period closed August 31, 1985.

The Supplement to the DEIS was released for public review on January 21, 1987. Nine public hearings on the Supplement were held throughout Oregon and in Boise, Idaho, in March 1987. The comment period closed on April 24, 1987.

This final EIS is being released before all mineral surveys are completed for areas that are recommended suitable for wilderness. A provision of FLPMA requires that the U.S. Geological Survey and Bureau of Mines complete the surveys before recommendations are submitted to Congress. The mineral surveys for areas in Oregon are scheduled to be completed in 1990. The wilderness suitability recommendations in this EIS are considered preliminary. Final recommendations will be submitted after the mineral survey reports are reviewed. The public is being given an opportunity to review and comment on the mineral reports.

The final wilderness suitability recommendations for Section 202 and Section 603 WSAs and nonsuitability recommendations for Section 603 WSAs only will be submitted to the BLM Director and Secretary of the Interior in wilderness study reports. Preparation and submission of the study reports constitutes the third and final stage of the wilderness review—reporting. FLPMA requires the Secretary of the Interior to submit wilderness suitability and nonsuitablility recommendations to the President by October 26, 1991, and the President then has 2 years to submit recommendations to Congress.

Scoping

Scoping is the early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. Scoping eliminates from detailed study the insignificant issues or issues addressed in earlier environmental reviews.

Solicitation of public comments to assist the Bureau in scoping the EIS began in December of 1982, with publication in the Federal Register of a Notice of Intent to prepare the EIS and conduct scoping meetings. Scoping for the Supplement to the DEIS was initiated through publication of a Federal Register Notice and media release in February 1986.

The interdisciplinary team and resource managers considered the areas of public interest and concern identified through scoping. The team used the scoping process to determine which concerns would be significantly impacted by the proposed action or alternatives. (The specific issues associated with these concerns are addressed in this statewide volume or in the pertinent WSA-specific appendices.)

Chapter 5 contains a summary of the scoping results, including a list of issues raised and addressed in the EIS, as well as "issues" raised but not addressed and the reasons for not addressing them. The summary also discusses the various alternatives developed as a result of scoping and explains why some suggested alternatives are not analyzed.

The following major issue topics are analyzed in the Oregon Statewide Wilderness EIS:

- Impacts on wilderness values, including naturalness, outstanding opportunities for solitude and primitive recreation, and special features (such as cultural and geologic resources, plants and animals of special interest, and others), and representation of Oregon's ecosystems in the National Wilderness Preservation System;

- Impacts on development of energy and mineral resources;

- Impacts on watershed values, including water quality and quantity, riparian conditions, and soil stability, primarily in perennial stream basins;

- Impacts on overall vegetation and special vegetation resources, including unique communities, riparian vegetation and threatened and endangered species;

- Impacts on wildlife, including game (e.g., deer, elk and antelope) and nongame species and their habitats, and species of special interest, including sensitive fish species and threatened and endangered wildlife species;

- Impacts on livestock grazing use levels and management;

- Impacts on utility corridor routing and communication facility siting;

- Impacts on timber harvest;

- Impacts on recreation use levels and types; and

- Impacts on local personal income levels from resource uses.

Chapter 2
Alternatives Including the Proposed Action

Apsen Grove in Lower Stonehouse WSA (OR-2-23M)

Description of the Alternatives Including the Proposed Action

The description of the proposed action and alternatives is divided into three sections. Together, these sections provide an overall picture of the wilderness/nonwilderness management combinations analyzed in this EIS as a basis for the discussion of impacts in the environmental consequences chapter.

This first section summarizes the wilderness/nonwilderness recommendations by alternative and describes the management objectives for each alternative. The next section identifies management practices that are standard for all of the alternatives and summarizes the wilderness management policy to indicate how areas designated as wilderness under any alternative would be managed. With this foundation, the third section identifies the various management actions proposed under each of the statewide alternatives.

There are two sets of alternatives analyzed in the EIS: the WSA-specific alternatives evaluated in the individual EIS appendices for each WSA and the statewide alternatives.

In the EIS appendices, the array of alternatives for each WSA includes at least No. 1 and No. 4, and often others, of the following (the number of WSAs for which a particular alternative has been developed is in parentheses):

1. All Wilderness (all 85 WSAs). This alternative analyzes designation of the entire WSA for preservation as wilderness.

2. Enhanced Wilderness (43 WSAs). This alternative is analyzed where there is an opportunity to enhance wilderness manageability for a WSA, through such means as closure of dead-end roads, acquisition of inholdings, merging with adjacent study areas by closing boundary roads and, in a few cases, adding areas of land outside study areas. In WSAs with areas of substantial potential management problems, this alternative may propose excluding the problem areas as a means of enhancing wilderness values in the remaining area.

3. Partial (32 WSAs). A partial alternative is analyzed where there is an opportunity to minimize conflicts by recommending only a portion of a study area as suitable for wilderness designation. In some cases this alternative also includes measures to enhance wilderness values when such measures substantially differ from the enhanced wilderness alternative.

4. No Wilderness/No Action (all 85 WSAs). This alternative analyzes continuation of current management in the absence of the interim management policy for lands under wilderness review. It represents the way the land would be used as envisioned in officially adopted planning decisions and projected out over approximately 50 years.

5. Proposed Action (developed as a separate alternative for 21 WSAs). For most WSAs the alternative proposed by BLM is one of the four described above and subtitled Proposed Action. For some WSAs, however, the proposed action is a different alternative specifically designed by the District Manager in an attempt to better address all conflict issues and enhancement opportunities while recognizing important wilderness values.

The statewide alternatives incorporate all alternatives developed in the appendices for the individual WSAs. However, the statewide alternatives are not simple aggregations of the WSA-specific alternatives. A different set of alternatives was developed for the entire state, partly to respond, in an aggregate fashion, to certain issues not brought into focus by the WSA-specific alternatives and partly because the WSA-specific appendices do not each address the same full set of alternatives. Thus, the WSA-specific alternatives are not meaningfully additive.

For example, addition of the WSA-specific enhanced alternatives would result in a statewide alternative recommending designation of parts of 43 WSAs and none of the remaining 42, regardless of the relevance of other factors to the question of the appropriate level of designation. Development of such an alternative would not contribute to effective comment on and analysis of the question.

The statewide proposed action, alternative 5, adopts the proposed action for each WSA as described in the appendices. Alternatives 2, 3, 4, and 6 are modifications of the proposed action, developed by sometimes substituting WSA-specific alternatives different than the proposed action in order to strengthen emphasis on a particular element (e.g., wilderness, commodity development, etc.).

For the entire State, the following alternatives are analyzed (acres that would be recommended suitable and nonsuitable for designation are in parentheses):

1. All Wilderness (suitable: 2,652,234 acres in 85 WSAs; nonsuitable: 0 acres). This alternative analyzes designation of the entire area of every WSA as wilderness (see map 1).

2. Wilderness Emphasis (suitable: 2,350,142 acres in 74 WSAs; nonsuitable: 332,865 acres). Within the range of alternatives between all wilderness and no wilderness, this alternative is designed to emphasize wilderness values, primarily through enhanced manageability of the wilderness resource (see map 2). It differs from the proposed action by using, instead of the WSA-specific proposed action, the enhanced wilderness alternative of each WSA that has one. For WSAs without an enhanced wilderness alternative, it uses any partial alternative that would recommend more wilderness area than the proposed action. Otherwise, it uses the WSA-specific proposed action. For three WSAs (Sand Dunes, OR-1-24, Malheur River-Bluebucket Creek, OR-2-14, and Aldrich Mountain, OR-2-103) that have no enhanced wilderness or partial alternative, but are considered important potential elements of wilderness diversity, the all wilderness alternative is used instead of the proposed action.

This alternative includes the no wilderness/no action alternative for some WSAs, namely those 1) not recommended for designation under their proposed action, and 2) lacking special values that warrant an enhanced wilderness or partial alternative or that would make them significant potential elements of wilderness diversity.

3. Conflict Resolution Emphasis (suitable: 1,242,478 acres in 55 WSAs; nonsuitable: 1,413,186 acres). This alternative is designed to moderate conflicts between wilderness designation and other values (see map 3). This alternative adopts the partial alternative of each WSA that has one. Otherwise, it adopts the WSA-specific proposed action.

4. Ecosystem Diversity Emphasis (suitable: 1,243,999 acres in 58 WSAs; nonsuitable: 1,414,398 acres). This alternative is designed to provide, within the aggregate area recommended for designation, a representation of each ecosystem identified in the Oregon Natural Heritage Plan that falls within any BLM WSA in Oregon (see map 4). It adopts the all wilderness alternative instead of the proposed action for those WSAs that provide the best cross-section of ecosystems not represented in the statewide proposed action.

5. The BLM Proposed Action (suitable: 1,128,850 acres in 48 WSAs; nonsuitable: 1,529,547 acres). This statewide alternative adopts the proposed action of each WSA (see map 5). As such, it recommends designation of those WSAs and portions of WSAs which BLM considers appropriate additions to the National Wilderness Preservation System, considering both their wilderness values and enhancement opportunities, as well as conflicts which could be created by such designations. It is intended to protect the highest quality wilderness values and optimize wilderness manageability, while allowing for utilization of moderate to high value competing resources. Note that the proposed action for each WSA may be all wilderness, enhanced wilderness, partial, no wilderness/no action, or another alternative, different from any of these, labeled the "proposed action."

6. Commodity Development Emphasis (suitable: 381,413 acres in 26 WSAs; nonsuitable; 2,273,321 acres). This alternative is designed to recommend no areas for designation that would preclude potentially important commodity production (see map 6). It adopts the no wilderness/no action alternative of each WSA where the proposed action, or any alternative that recommends fewer acres suitable than the proposed action, would lead to foregoing projected mineral development or utilization and enhancement of significant livestock grazing values.

7. No Wilderness/No Action (suitable: 0 acres; nonsuitable: 2,652,234 acres). This alternative analyzes continuation of current management and implementation of existing planning decisions projected out over approximately 50 years.

Detailed descriptions of the alternatives for each WSA are in the individual appendices. Table 2-1 shows how the WSA-specific alternatives are aggregated under each statewide alternative to analyze the statewide impacts. Table 2-2 presents the acreages recommended suitable for wilderness designation, by WSA, under each statewide alternative.

Other alternatives were considered for analysis in this EIS, but were rejected for reasons identified in the Formulation of Alternatives section in Chapter 5.

Standard Management Practices and Wilderness Management Policy

Certain standard management practices directed by regulations, policy and manuals would apply to all alternative management programs. Protection of soils, watershed, visual resources, air quality and other resources is required by the Federal Land Policy and

Table 2-1. Relationship Between Statewide and Appendix Alternatives [1,2]

WSA No. (OR-)	WSA Name	Alt. 1 All Wilderness	Alt. 2 Wilderness Emphasis	Alt. 3 Conflict Resolution Emphasis	Alt. 4 Ecosystem Diversity Emphasis	Alt. 5 Proposed Action	Alt. 6 Commodity Development Emphasis
1-2	Devils Garden Lava Bed	A	E	E	E	E	E
1-3	Squaw Ridge Lava Bed	A	P	P	P	P	P
1-22	Four Craters Lava Bed	A	Pr	P	Pr	Pr	Pr
1-24	Sand Dunes	A	A	O	A	O	O
1-58	Diablo Mountain	A	E	P	Pr	Pr	O
1-78	Orejana Canyon	A	P	P	P	P	P
1-101	Abert Rim	A	A	A	A	A	A
1-117	Fish Creek Rim	A	E	P	P	P	O
1-132	Guano Creek	A	A	P	A	A	A
1-139	Spaulding	A	P	P	O	O	O
1-146A	Hawk Mountain	A	A	P	A	A	P
1-146B	Sage Hen Hills	A	O	O	O	O	O
2-14	Malheur River-Bluebucket Cr.	A	A	O	A	O	O
2-23L	Stonehouse	A	P	P	O	O	O
2-23M	Lower Stonehouse	A	P	P	O	O	O
2-72C	Sheepshead Mtns.	A	E	Pr	Pr	Pr	O
2-72D	Wildcat Canyon	A	E	Pr	Pr	Pr	O
2-72F	Heath Lake	A	E	O	O	O	O
2-72I	Table Mountain	A	E	Pr	Pr	Pr	O
2-72J	West Peak	A	E	O	O	O	O
2-73A	East Alvord	A	E	O	A	O	O
2-73H	Winter Range	A	O	O	O	O	O
2-74	Alvord Desert	A	E	Pr	Pr	Pr	Pr
2-77	Mahogany Ridge	A	E	O	O	O	O
2-78	Red Mountain	A	E	O	O	O	O
2-81	Pueblo Mountains	A	E	P	Pr	Pr	O
2-82	Rincon	A	E	Pr	Pr	Pr	Pr
2-83	Alvord Peak	A	E	O	O	O	O
2-84	Basque Hills	A	E	O	O	O	O
2-85F	High Steens	A	E	P	Pr	Pr	O
2-85G	S. Fk. Donner & Blitzen R.	A	E	O	O	O	O
2-85H	Home Creek	A	P	P	P	P	P
2-86E	Blitzen River	A	E	P	Pr	Pr	Pr
2-86F	Little Blitzen Gorge	A	E	P	Pr	Pr	Pr
2-87	Bridge Creek	A	O	O	O	O	O
2-98A	Pine Creek	A	O	O	A	O	O
2-98C	Sheep Gulch	A	O	O	A	O	O
2-98D	Indian Creek	A	O	O	A	O	O
2-103	Aldrich Mountain	A	A	O	A	O	O
3-18	Castle Rock	A	E	O	O	O	O
3-27	Beaver Dam Creek	A	O	O	O	O	O
3-31	Camp Creek	A	E	P	P	P	P
3-32	Cottonwood Creek	A	E	P	P	P	P
3-33	Gold Creek	A	E	P	P	P	P
3-35	Sperry Creek	A	E	P	P	P	P
3-47	Cedar Mountain	A	E	O	A	O	O
3-53	Dry Creek	A	E	O	O	O	O
3-56	Dry Creek Buttes	A	O	O	O	O	O
3-59	Owyhee Breaks	A	Pr	Pr	Pr	Pr	O
3-73	Blue Canyon	A	A	A	A	A	O
3-74	Upper Leslie Gulch	A	A	A	A	A	A
3-75	Slocum Creek	A	A	A	A	A	A
3-77A	Honeycombs	A	P	P	P	P	O
3-77B	Wild Horse Basin	A	O	O	O	O	O
3-110	Lower Owyhee Canyon	A	E	P	P	P	O
3-111	Saddle Butte	A	P	P	O	O	O
3-114	Palomino Hills	A	E	O	O	O	O

Table 2-1. Relationship Between Statewide and Appendix Alternatives [1,2] (continued)

WSA No. (OR-)	WSA Name	Alt. 1 All Wilderness	Alt. 2 Wilderness Emphasis	Alt. 3 Conflict Resolution Emphasis	Alt. 4 Ecosystem Diversity Emphasis	Alt. 5 Proposed Action	Alt. 6 Commodity Development Emphasis
3-118	Bowden Hills	A	P	P	O	O	O
3-120	Clarks Butte	A	O	O	O	O	O
3-128	Jordan Craters	A	E	P	P	P	O
3-152	Willow Creek	A	E	Pr	Pr	Pr	O
3-153	Disaster Peak	A	E	Pr	Pr	Pr	O
3-156	Fifteenmile Creek	A	E	Pr	Pr	Pr	O
3-157	Oregon Canyon	A	E	Pr	Pr	Pr	O
3-162	Twelvemile Creek	A	E	Pr	Pr	Pr	O
3-173	Upper W. Ltl. Owyhee	A	E	E	E	E	O
3-194	Lookout Butte	A	E	O	O	O	O
5-1	Thirtymile	A	Pr	P	Pr	Pr	P
5-6	Lower John Day	A	Pr	P	Pr	Pr	P
5-8	North Pole Ridge	A	Pr	P	Pr	Pr	Pr
5-9	Spring Basin	A	A	P	A	A	O
5-21	Badlands	A	Pr	P	Pr	Pr	O
5-31	North Fork	A	E	O	A	O	O
5-33	South Fork	A	E	E	E	E	O
5-34	Sand Hollow	A	E	E	E	E	O
5-35	Gerry Mountain	A	P	P	O	O	O
5-42	Hampton Butte	A	E	O	O	O	O
5-43	Cougar Well	A	E	O	O	O	O
6-1	McGraw Creek	A	O	O	O	O	O
6-2	Homestead	A	P	P	A	O	O
6-3	Sheep Mountain	A	E	E	E	E	E
11-1	Mountain Lakes	A	A	A	A	A	A
11-17	Soda Mountain	A	A	P	A	A	A
12-8	N. Sisters Rocks	A	A	A	A	A	A
12-14	Zwagg Island	A	A	A	A	A	A

[1] The appendix alternatives include all wilderness (A), enhanced wilderness (E), partial (P), proposed action (Pr), and no wilderness/no action (O). Note that the Proposed Action column lists the porposed action for each WSA (A, E, P or O, or Pr which refers to an alternative that was different from A, E, P or O and labeled the "proposed action").

[2] The column for the statewide no wilderness/no action alternative (Alt. 7) has been omitted, since all entries would be zero.

Management Act of 1976. Specific guidance for these measures is embodied in numerous policy statements and regulations. Specific legislation, such as the Endangered Species Act and the Antiquities Act, also governs management under all alternatives.

BLM adopted a wilderness management policy in September 1981. It served as one of the principal bases for the analyses in this EIS. The policy is based on guidance found in the Wilderness Act of 1964 and the Federal Land Policy and Management Act. The primary aim of the policy is to preserve the wilderness character of designated areas and to provide opportunities for people to use the areas. Generally, these "accepted" uses will not impair wilderness values. However, Congress also has said certain "nonconforming" uses may occur in wilderness areas, and in some cases these uses may detract from the areas' wilderness character.

The following summarizes general management guidelines which would be applied to all BLM areas designated as wilderness. A copy of the full policy may be obtained from any of the six district offices that manage wilderness study areas or from the BLM State Office in Portland.

General Policies

The general wilderness management policies include the following:

Naturalness: Natural ecosystems and ecological processes will be allowed to function naturally and with minimal human influence.

Solitude: Natural settings will be preserved and evidence of human activity will be minimized.

Table 2-2. Acres of Federal Land Recommended Suitable Under Each Alternative[1]

WSA No. (OR-)	WSA Name	Alt. 1 All Wld.	Alt. 2 Wld Emp.	Alt. 3 Con. Res.	Alt. 4 Eco. Div.	Alt. 5 P. A.	Alt. 6 Com. Dvl.
1-2	Devils Garden Lava Bed	29,680	28,160	28,160	28,160	28,160	28,160
1-3	Squaw Ridge Lava Bed	28,340	21,010	21,010	21,010	21,010	21,010
1-22	Four Craters Lava Bed	12,600	9,100	5,130	9,100	9,100	9,100
1-24	Sand Dunes	16,440	16,440	0	16,440	0	0
1-58	Diablo Mountain	113,120	113,120	51,160	85,150	85,150	0
1-78	Orejana Canyon	24,600	14,800	14,800	14,800	14,800	14,800
1-101	Abert Rim	23,760	23,760	23,760	23,760	23,760	23,760
1-117	Fish Creek Rim	16,690	15,340	11,920	11,920	11,920	0
1-132	Guano Creek	10,350	10,350	9,890	10,350	10,350	10,350
1-139	Spaulding	69,530	34,800	34,800	0	0	0
1-146A	Hawk Mountain	69,640	69,640	42,280	69,640	69,640	42,280
1-146B	Sage Hen Hills	8,520	0	0	0	0	0
2-14	Malheur R.-Bluebucket Cr.	5,560	5,560	0	5,560	0	0
2-23L	Stonehouse	21,325	20,315	20,315	0	0	0
2-23M	Lower Stonehouse	8,090	7,125	7,125	0	0	0
2-72C	Sheepshead Mtns.	54,390	54,390	45,705	45,705	45,705	0
2-72D	Wildcat Canyon	34,830	34,830	34,830	34,830	34,830	0
2-72F	Heath Lake	20,520	20,520	0	0	0	0
2-72I	Table Mountain[2]	40,592	56,992	25,185	25,185	25,185	0
2-72J	West Peak	8,535	8,535	0	0	0	0
2-73A	East Alvord	22,240	22,240	0	22,240	0	0
2-73H	Winter Range	15,440	0	0	0	0	0
2-74	Alvord Desert	251,060	218,090	69,165	69,165	69,165	69,165
2-77	Mahogany Ridge	27,940	28,750	0	0	0	0
2-78	Red Mountain	16,215	16,215	0	0	0	0
2-81	Pueblo Mountains[3]	72,690	73,890	41,315	26,150	26,150	0
2-82	Rincon	103,965	103,965	19,428	19,428	19,428	19,428
2-83	Alvord Peak	16,825	16,825	0	0	0	0
2-84	Basque Hills	141,410	141,410	0	0	0	0
2-85F	High Steens	69,740	54,800	35,930	31,975	31,975	0
2-85G	S.Fk. Donner & Blitzen R.	37,555	37,555	0	0	0	0
2-85H	Home Creek	26,590	22,015	22,015	22,015	22,015	22,015
2-86E	Blitzen River	55,880	58,130	8,735	21,970	21,970	21,970
2-86F	Little Blitzen Gorge	9,400	9,570	6,430	4,600	4,600	4,600
2-87	Bridge Creek	14,545	0	0	0	0	0
2-98A	Pine Creek	200	0	0	200	0	0
2-98C	Sheep Gulch	741	0	0	741	0	0
2-98D	Indian Creek	208	0	0	208	0	0
2-103	Aldrich Mountain	9,395	9,395	0	9,395	0	0
3-18	Castle Rock	6,200	5,975	0	0	0	0
3-27	Beaver Dam Creek	19,580	0	0	0	0	0
3-31	Camp Creek	19,200	19,200	17,770	17,770	17,770	17,770
3-32	Cottonwood Creek	8,700	8,700	7,700	7,700	7,700	7,700
3-33	Gold Creek	13,600	15,800	15,800	15,800	15,800	15,800
3-35	Sperry Creek	5,600	5,600	5,600	5,600	5,600	5,600
3-47	Cedar Mountain	33,600	33,600	0	33,600	0	0
3-53	Dry Creek	23,500	23,500	0	0	0	0
3-56	Dry Creek Buttes	51,800	0	0	0	0	0
3-59	Owyhee Breaks	13,380	10,645	10,645	10,645	10,645	0
3-73	Blue Canyon	12,700	12,700	12,700	12,700	12,700	0
3-74	Upper Leslie Gulch	3,000	3,000	3,000	3,000	3,000	3,000
3-75	Slocum Creek	7,600	7,600	7,600	7,600	7,600	7,600
3-77A	Honeycombs	39,000	36,600	36,600	36,600	36,600	0
3-77B	Wild Horse Basin	12,100	0	0	0	0	0
3-110	Lower Owyhee Canyon	75,700	75,700	64,225	64,225	64,225	0
3-111	Saddle Butte	86,300	61,160	61,160	0	0	0
3-114	Palomino Hills	54,600	54,600	0	0	0	0
3-118	Bowden Hills	59,900	45,260	45,260	0	0	0
3-120	Clarks Butte	31,490	0	0	0	0	0
3-128	Jordan Craters	27,900	27,900	23,225	23,225	23,225	0
3-152	Willow Creek	30,565	30,565	26,160	26,160	26,160	0
3-153	Disaster Peak[4]	32,040	32,290	29,890	29,890	29,890	0
3-156	Fifteenmile Creek	51,290	51,780	51,780	51,780	51,780	0
3-157	Oregon Canyon	42,900	42,900	42,900	42,900	42,900	0
3-162	Twelvemile Creek	28,600	29,090[5]	25,990[5]	25,990[5]	25990[5]	0
3-173	Upper W. Ltl. Owyhee	62,500	62,500	62,500	62,500	62,500	0

Table 2-2. Acres of Federal Land Recommended Suitable Under Each Alternative[1] (continued)

WSA No. (OR-)	WSA Name	Alt. 1 All Wld.	Alt. 2 Wld Emp.	Alt. 3 Con. Res.	Alt. 4 Eco. Div.	Alt. 5 P. A.	Alt. 6 Com. Dvl.
3-194	Lookout Butte	99,600[6]	99,600[6]	0	0	0	0
5-1	Thirtymile	7,538	7,332	5,686	7,332	7,332	5,686
5-6	Lower John Day	19,587	20,264	12,767	20,264	20,264	12,767
5-8	North Pole Ridge	6,369	5,830	5,332	5,830	5,830	5,830
5-9	Spring Basin	5,982	5,982	5,299	5,982	5,982	0
5-21	Badlands	32,221	32,030	20,727	32,030	32,030	0
5-31	North Fork	12,110[7]	12,110[7]	0	12,110[7]	0	0
5-33	South Fork	19,631	17,001	17,001	17,001	17,001	0
5-34	Sand Hollow	8,791	8,391	8,391	8,391	8,391	0
5-35	Gerry Mountain	20,700	16,470	16,470	0	0	0
5-42	Hampton Butte	10,600	10,600	0	0	0	0
5-43	Cougar Well	18,435	18,435	0	0	0	0
6-1	McGraw Creek	497	0	0	0	0	0
6-2	Homestead	14,655[8]	8,773[9]	8,773[9]	14655[8]	0	0
6-3	Sheep Mountain	7,040	7,040	7,040	7,040	7,040	7,040
11-1	Mountain Lakes	334	334	334	334	334	334
11-17	Soda Mountain	5,640	5,640	5,057	5,640	5,640	0
12-8	N. Sisters Rocks	3	3	3	3	3	3
12-14	Zwagg Island	5	5	5	5	5	5
Totals		**2,652,234**	**2,350,142**	**1,242,478**	**1,243,999**	**1,128,850**	**381,413**

[1] The column for the no wilderness/no action alternative has been omitted, since all entries would be zero.

[2] For tabular purposes, the public lands outside the WSAs of the Sheepshead Mountains group that are included in the suitable recommendation under the wilderness emphasis alternative are added to the Table Mountain WSA only.

[3] Suitable acreages include Nevada's Pueblo Mountain WSA (NV-020-642) totaling 600 acres.

[4] Suitable acreages include Nevada's Disaster Peak WSA (NV-020-859) totaling 13,200 acres under alternatives 1and 2 and 12,300 acres under alternatives 3, 4 and 5.

[5] For tabular purposes, the public lands outside the WSAs of the Trout Creek Mountains Group that are included in the suitable recommendation under these alternatives are added to the Twelvemile Creek WSA only.

[6] Includes 34,400 acres in Idaho's Lookout Butte WSA (ID-16-48A).

[7] Includes 1,125 acres adjacent jointly studied national forest land.

[8] Includes 7,654 acres of the adjacent jointly studied national forest land (Homestead Further Planning Area).

[9] Includes 6,200 acres of the adjacent Homestead Further Planning Area.

Special Features: Ecological, geological and historical features will be preserved unimpaired.

Visitor Use: Only the minimum facilities needed to protect the health and safety of visitors or to preserve wilderness values will be installed. When use of an area threatens to impair wilderness values, the use will be managed or limited to prevent such impairments.

Wilderness Management Plan: A management plan will be prepared for each designated wilderness area. It will apply national policies to the specific situation in the area.

Accepted Uses

Accepted uses in wilderness include:

- Camping, hiking, cross-country skiing, backpacking, horsepacking, rockhounding.
- Nonmotorized boating.
- Hunting, fishing, noncommercial trapping.
- Scientific and educational studies of biological, geological, cultural and historic features.

Nonconforming but Accepted Uses

Examples of other uses allowed by law in wilderness areas are:

Mining and Mineral Leasing

- Wilderness areas are withdrawn from location of new mining claims and the issuance of mineral leases upon designation.

Mining Claims

- After an area is designated as wilderness, miners may explore, develop, and obtain title to claims which existed as valid claims before the area was designated.

- New claims cannot be established after the area is withdrawn from the mining laws through wilderness designation.

- Except for casual uses resulting in negligible disturbances of wilderness values, a miner will be required to submit a plan of operations and receive approval from BLM. In approving the operating plan, BLM must ensure that the miner's rights are protected while impacts on wilderness values are minimized. Mining operations must not, under any circumstances, cause unnecessary or undue degradation of resources.

Mineral Leasing

- No new leases will be issued. Leases existing at the time of designation will be managed to protect wilderness values to the extent possible, but lessees will be allowed to exercise the rights conferred when they obtained the leases.

Livestock Grazing

- Livestock grazing, where established prior to wilderness designation, will be allowed to continue. Grazing will not be curtailed simply because an area is designated wilderness. Any adjustments in the number of livestock allowed in a wilderness area will be made through BLM's normal grazing and land management planning and policy-setting processes. Due consideration will be given to legal mandates, range condition and the need to prevent range deterioration. Where rangeland conditions permit increases in grazing use, such increases will be limited to levels that do not diminish the wilderness values of the area.

- Facilities used in livestock operations, such as fences, line cabins and stock tanks, may be maintained and replaced. New livestock grazing facilities may be constructed if they are needed to protect the rangeland and/or wilderness resource and to effectively manage these resources, rather than to accommodate increased numbers of livestock.

- Motorized equipment may be used occasionally to maintain livestock facilities or manage livestock, in accordance with specific stipulations in livestock use permits, if there are no practical alternatives.

Management of Wild Horses

- Viable, healthy populations of wild horses will be maintained in wilderness areas which contain wild horse herd management areas designated under the provisions of the Wild Free-Roaming Horse and Burro Act of 1971. Herd numbers and management techniques will not substantially degrade, and will be compatible with preservation of, the areas' wilderness character.

- Use of motorized and mechanical equipment and use of equipment such as temporary corrals will be allowed when no alternatives exist, they are the minimum necessary to accomplish the task, and they are the least degrading of wilderness values.

Fire, Insect and Disease Management

- Fires will be controlled to prevent loss of human life or property within wilderness areas or to prevent the spread of fires to areas outside of wilderness where life, resources or property may be threatened. Human-caused wildfires will be prevented and/or controlled unless they meet wilderness fire management objectives.

- To return some wilderness ecosystems to a more natural state, it may be appropriate to allow natural fires to burn, but only in conformance with an approved fire management plan and the overriding guidance in the preceding paragraph.

- Prescribed burning may be allowed to meet specific objectives listed in the wilderness management policy.

- Insect and disease outbreaks will be artificially controlled only if necessary to protect timber or other valuable resources outside a wilderness, or in special instances when losses within a wilderness (for example, a threatened or endangered species) are undesirable.

Water Resource Developments

- Water resource facilities which existed before the area was designated wilderness may be used and maintained if such use is in the public interest or is a valid existing right.

Access to Non-Federal Lands

- States or persons, and their successors in interest, who own land completely surrounded by a wilderness area shall be given such rights as may be necessary to ensure adequate access to their land. "Adequate access" is the combination of routes and modes of travel which will, as determined by BLM, cause the least lasting impact on wilderness values and at the same time serve the reasonable purpose for which the state or private land is held.

Gathering Information About Resources

- Activities whose purposes are to gather information about natural resources will be permitted if they would not impair wilderness values.

- Motorized equipment and vehicles may be used for such activities only with BLM approval. BLM will grant such authorization only if wilderness values would not be degraded.

Prohibition of Certain Uses

- Except where subject to existing private rights, where necessary to administer the wilderness area according to the purposes of the Wilderness Act, or as specifically provided for elsewhere in the management policy, there will be no permanent or temporary roads; no use of motor vehicles, motorized equipment, or motor boats; no landing of aircraft; no other form of mechanical transport; no structure or installation; and no commercial enterprise within wilderness areas.

Buffer Zones Prohibited

- No buffer zones will be created around wilderness areas to protect them from the influence of activities on adjacent land.

Motorized and Mechanical Equipment

- Travel in a wilderness area normally will be by nonmotorized, nonmechanical means consistent with the preservation of wilderness values.

- The management plan for a wilderness area will specify the instances and places in which administrative use of mechanized equipment, mechanical transport or aircraft is necessary to protect and administer the wilderness area; or is necessary to accomplish a nonconforming, but accepted, use.

- Where approved, the selected equipment will be the minimum necessary to accomplish the task with the least lasting and damaging impact on wilderness values.

- Motorized and mechanical equipment use will be scheduled at times and locations which will have the least impact on the visitors' wilderness experience.

- Examples of some of the conditions under which motorized and mechanical equipment may be allowed are:

1. Public use of aircraft or motorboats, where such uses were established before the area was designated wilderness.

2. For mining or prospecting purposes if approved in a plan of operations or related to valid existing rights.

3. In some situations involving livestock grazing operations.

4. In emergency conditions involving the health and safety of visitors.

5. During a fire suppression emergency.

Other possible uses of motorized and mechanical equipment are listed in the management policy.

Special Management Provisions

- In legislation designating specific wilderness areas, Congress may establish management rules which override those in the Wilderness Act or BLM's wilderness management policy.

For analysis purposes in this EIS, it is assumed that Congress will include standard road setback guidance in wilderness legislation affecting these WSAs. Congress traditionally has used standard road setbacks, for wilderness boundaries along existing roads, to allow for road maintenance and minor realignment. The standard distances represent the amount of feet that the boundary would be pulled back from the road's centerline, depending on specific terrain. The setbacks provide for 300 feet from centerline for high standard roads such as paved highways; l00 feet from centerline for high standard gravel or bladed roads; and 30 feet from centerline for low standard roads, jeep trails or ways. The site-specific appendices for WSAs in this EIS characterize road boundaries of WSAs and the suitable recommendations in terms of these road types.

Other Management Policies

- The wilderness management policy booklet contains guidelines on other topics not included in this summary, such as recreation and visitor use, cultural and historical resources, forest resources, fish and wildlife, water resource management, and others.

Summary of Projected Management Under Each Alternative

Table 2-3 summarizes the management programs projected to occur, on a statewide basis, for the study areas under each alternative. Specific alternative management programs for each WSA are described in the individual appendices. Resource use projections are based on current conditions and trends and represent a best professional estimate of reasonably foreseeable future actions. Unforeseen changes in such factors as economics, demand, and Federal, State and local laws and policies could result in different outcomes than those projected for this analysis. Although the WSAs are presently managed under the BLM Interim Management Policy (IMP, BLM Manual H-8550-1), which restricts some activities, such as mineral leasing, development of the projections required an estimation of what the current conditions and trends would be without the temporary protection of the IMP.

The actions described for each alternative with a suitable wilderness recommendation also include predictions, for analysis purposes, as to whether or not a projected action would be allowed under wilderness designation. These predictions are based on the Wilderness Management Policy (September 1981) and professional judgment regarding approximate project locations, general site conditions, and design features commonly applied to the various types of projects expected. No definitive forecast of the outcome of a site-specific analysis required prior to implementation of any project in a wilderness area can be made.

Following are some general explanations for several items included in table 2-3.

Acres Designated as Wilderness: These entries represent the total acres of Federal land recommended suitable for wilderness designation under each alternative. The acreages include lands administered by the U.S. Forest Service in the all wilderness, wilderness emphasis, conflict resolution emphasis, and ecosystem diversity emphasis alternatives as a result of USFS/BLM joint wilderness studies involving lands adjoining the North Fork WSA (OR-5-31) and the Homestead WSA (OR-6-2). In all alternatives but the all wilderness and no wilderness/no action alternatives, the entries also include small acreages of public land adjacent to WSAs which were recommended as suitable for wilderness in a few cases to enhance manageability of the adjacent area as wilderness. Recommended acquisitions under each alternative are not included in these entries as their addition to the wilderness would not be automatic upon designation by Congress. These acquisitions are dependent on willing landowners.

Acres Closed to ORVs by Wilderness Designation: The acreages may be lower than the total acres designated wilderness under each alternative, since ORV closures already exist in portions of several WSAs.

Miles of Roads Closed: Some primitive BLM roads separating adjacent study areas would be closed and the study areas—or portions of study areas—would be merged into a larger wilderness area. (If there were no practical alternative to the use of a motorized vehicle to manage livestock or maintain livestock grazing facilities, a grazing permittee may be allowed to use a vehicle on a closed route under terms specified in the grazing permit.) In addition, some of the dead-end roads extending into study areas recommended as suitable for wilderness would be closed.

No road closures or mergers of study areas are included in the all and no wilderness/no action alternatives; in the remaining alternatives, the number of recommended mergers decreases from the wilderness emphasis alternative to the commodity development emphasis alternative.

Acres of Full Fee Estate Acquired and Acres of Mineral Estate Acquired: All of the alternatives except the all wilderness and no wilderness/no action alternatives include recommendations to acquire private lands and mineral estate within or adjacent to WSAs to include these lands in areas recommended as suitable for wilderness. Private lands and mineral estate could be acquired through purchase or exchange with willing owners. Upon acquisition, the additional private lands would be incorporated into the wilderness area, closed to vehicle use, and withdrawn from mineral location and leasing. Therefore, the acquired acreages could be added to the entries for these line items. The split-estate lands would be withdrawn from mineral location and leasing after the mineral estate was acquired.

Acres Withdrawn from Mineral Location and Leasing by Wilderness Designation: The acreages may be lower than the total acres designated wilderness under each alternative, since mineral withdrawals already exist in portions of a few WSAs.

Unallocated Existing Forage Allocated: In some WSAs, more forage is currently produced than has

Table 2-3. Summary of Projected Management Under Each Alternative

Proposed Management	Alt. 1 All Wld.	Alt. 2 Wld. Emp.	Alt. 3 Con. Res.	Alt. 4 Eco. Div.	Alt. 5 P.A.	Alt. 6 Com. Dvl.	Alt. 7 No Wld.
Public Land Acres Designated as Wilderness	2,652,234	2,350,142	1,242,478	1,243,999	1,128,850	381,413	0
Acres Closed to ORVs by Wilderness Designation	2,608,354	2,323,822	1,223,348	1,224,289	1,116,220	360,403	0
Miles of Roads Closed	0	373.8	98.2	96.2	96.2	26	0
Miles of Ways Closed	1,139.2	1,035.3	449.1	510.6	459.7	96.2	0
Miles of Roads Constructed	32.1	90.3	184.4	161.6	191.9	267.8	309.1
Acres of Full Fee Estate Acquired	0	43,760	14,020	9,723	9,723	800	0
Acres of Mineral Estate Acquired	0	102,120	48,755	41,105	41,105	12,785	0
Acres Withdrawn from Mineral Location & Leasing by Wilderness Designation	2,498,399	2,206,478	1,161,769	1,165,820	1,061,245	362,148	0
Oil & Gas Production Drill Pads Developed (number)	0	3	20	19	23	35	35
Geothermal Powerplants Developed (number)	0	2	5	4	5	6	6
Mine Sites Developed (number)	16	27	37	33	36	57	57
Oil/Gas/Geothermal Pipelines Developed (miles)	0	2.3	12.3	12.3	14.8	22.3	22.3
Structural Wildlife Projects Developed:							
Catchments & Guzzlers (number)	8	13	23	34	36	42	49
Fences (miles)	5.9	4.5	16.9	15.5	15.5	15.5	19.5
Stream Channel, Wetlands & Fish Stocking Projects (number)	12	12	16	16	16	17	17
Vegetative Manipulation for Wildlife:							
Brush Control without Seeding (acres)	10,580	11,780	28,080	28,280	35,280	50,880	59,980
Seeding & Brush Control with Seeding (acres)	0	3,400	12,520	12,444	12,444	13,364	12,974
Watershed Projects Developed:							
Stream Structures (number)	10	10	10	10	10	10	10
Fences (miles)	2	2	6	6	6	6	6
Bank/Channel Modifications (miles)	0	1.5	6.5	7.8	7.8	10.8	10.8
Juniper Control (acres)	0	1,390	2,190	2,190	21,990	2,990	2,990
Structural Livestock Projects Developed:							
Reservoirs & Waterholes (number)	0	12	61	68	73	100	116
Springs (number)	0	1	18	14	15	29	42
Wells (number)	0	1	5	6	6	7	7
Pipelines (miles)	0.2	10	91.2	91.2	91.2	112.2	123.2
Fences (miles)	64	68.8	153	151.8	160.8	184.8	193.5
Storage Tanks (number)	0	0	3	3	3	4	5
Vegetative Manipulation for Livestock:							
Brush Control without Seeding (acres)	0	1,790	35,050	35,460	35,460	47,680	50,140
Brush Control with Seeding (acres)	0	2,935	18,755	19,267	19,547	23,177	24,842
Juniper Control w/o Seeding (acres)	0	0	1,520	0	0	2,500	2,500
Unallocated Existing Forage Allocated (AUMs)	0	1,118	13,857	19,966	19,966	38,246	38,246
Increased Forage Allocation from Projects (AUMs)	0	2,766	15,019	15,571	15,707	18,127	18,793
Decreased Forage Allocation (AUMs)	3,328	3,346	494	324	324	354	354
Acres of Timber Available for Harvest	0	98	1,539	0	1,268	1,268	1,873
Average Annual Volume of Timber Produced (Mbf-Thousand Board Feet)	0	7	216	0	156	156	310
Acres of Suitable Minor Forest Products Available for Harvest	0	691	9,220	2,251	2,251	8,820	9,820
Miles Added to Potential Utility Corridors	18.7	7.4	0	0	0	0	0
Powerlines Developed (miles)	0	31	79.5	71	79.5	86	86.5

been allocated to livestock or for any other purpose. This forage could be made available to livestock without the development of any new livestock management facilities.

Miles added to potential utility corridors: These entries represent the additional lengths involved in rerouting potential utility corridors around areas designated as wilderness under each alternative.

Effects of the Alternatives

Table 2-4 presents a comparison of impacts of the proposed action and other alternatives.

Interrelationships with other BLM Studies; Local, State and Federal Agencies; and Utility Corridor Studies

Other BLM Studies and Plans

Two BLM wilderness study areas in Oregon are not analyzed in this EIS. One, the Owyhee River Canyon WSA (OR-3-195) is addressed in detail in the Owyhee Canyonlands Wilderness EIS, the draft of which was issued by BLM's Boise District Office in March 1984. That EIS addresses the impacts of wilderness designation for eight WSAs along the Owyhee River where the states of Oregon, Idaho and Nevada join. Of the approximately 450,000 acres in the eight WSAs, about 224,000 acres are in the Owyhee River Canyon WSA; 191,000 acres are in Oregon. The draft EIS analyzes five alternatives, with the proposed action recommending approximately 378,000 acres as suitable for wilderness, including about 186,000 acres in the Owyhee River Canyon WSA (152,000 in Oregon).

The Steelhead Falls WSA (OR-5-14) will be addressed in a Forest Service EIS (see "Adjacent Forest Service Areas" in this chapter).

Congress required in the Federal Land Policy and Management Act that the wilderness review of certain primitive and research natural areas be carried out on an accelerated basis. Five of these areas, called instant study areas, are located in Oregon. Four of these areas have been recommended (by the Secretary of the Interior to the President) for nondesignation as wilderness, as they do not have wilderness characteristics. Portions of the Lost Forest Instant Study Area (ISA) are contained in the Sand Dunes WSA (OR-1-24). The State Director's report to the BLM Director on the Lost Forest ISA concluded that the ISA by itself lacked wilderness characteristics, and therefore should not be recommended for wilderness designation. However, it also concluded that the portion of the ISA within the Sand Dunes WSA should be studied as part of the Sand Dunes WSA.

A number of WSAs embrace all or part of designated Areas of Critical Environmental Concern and/or Research Natural Areas. The management constraints for these areas would generally remain the same whether or not the lands were also designated wilderness, with the primary exception that; if designated wilderness, they would be withdrawn from mineral location and leasing.

All of Little Blitzen Gorge WSA (OR-2-86F) and substantial portions of Blitzen River (OR-2-86E), High Steens (OR-2-85F), South Fork of the Donner und Blitzen River (OR-2-85G) and Bridge Creek (OR-2-87) WSAs lie within an area designated in 1971 as the Steens Mountain Recreation Lands. This designation earmarks the area for special multiple use management while maintaining its natural condition to protect recreational values. Private and State lands, as well as those managed by BLM, are included in the designated area.

Adjacent Forest Service Areas

Four BLM WSAs lie adjacent to existing wilderness areas administered by the U.S. Forest Service, separated only by administrative boundaries. The Strawberry Mountain WSAs (Pine Creek, OR-2-98A, Sheep Gulch, OR-2-98C and Indian Creek, OR-2-98D), which total 1,149 acres, adjoin the 68,700-acre Strawberry Mountain Wilderness administered by the Malheur National Forest. BLM's 334-acre Mountain Lakes WSA (OR-11-1) adjoins the 23,071-acre Mountain Lakes Wilderness administered by the Winema National Forest.

In addition, two national forest roadless areas designated as further planning areas and one undesignated national forest roadless area lie adjacent to BLM WSAs. Through cooperative agreements between BLM and the U.S. Forest Service, these adjoining areas are being jointly studied with one agency designated as lead. The suitability of jointly studied lands is addressed in the designated lead agency's Plan/EIS with review and input provided by the cooperating agency.

Table 2-4. Comparison of Impacts

Impact Topics	Alt. #1 All Wilderness	Alt. #2 Wilderness Emphasis	Alt. #3 Conflict Res. Emphasis
Impacts on Wilderness Values	Wilderness values protected and enhanced on 2,652,234 acres. Two Bailey-Kuchler ecosystems, not currently represented in NWPS, added to system.	Wilderness values protected and enhanced on 2,393,902 acres, assuming acquisition of 43,760 acres of state and private lands. Closure of 374 miles of roads and acquisition of 102,120 acres of mineral estate would further preserve wilderness values. On 332,865 acres not designated, wilderness values directly and indirectly impaired on 125,500 acres from projected activities. Two Bailey-Kuchler ecosystems, not currently represented in NWPS, added to system.	Wilderness values protected and enhanced on 1,256,498 acres, assuming acquisition of 14, 020 acres of state and private lands. Closure of 98 miles of roads and acquisition of 48,755 acres of mineral estate would further preserve wilderness values. On 1,413,186 acres not designated, wilderness values directly and indirectly impaired on 524,000 acres from projected activities. Two Bailey-Kuchler ecosystems, not currently represented in NWPS, added to system.
Impacts on Energy & Mineral Development	A total of 2,498,399 acres (except for valid existing rights) withdrawn from entry, precluding projected development of 35 oil and gas wells, 6 geothermal powerplants, and 41 metallic and non-metallic mines. Projected development of 16 metallic and non-metallic mines would occur.	A total of 2,352,358 acres (except for valid existing rights) withdrawn, precluding projected development of 32 oil and gas wells, 4 geothermal powerplants, and 30 metallic and non-metallic mines. Projected development of 3 oil and gas wells, 2 geothermal powerplants, and 27 metallic and non-metallic mines would occur.	A total of 1,224,544 acres (except for valid existing rights) withdrawn, precluding projected development of 15 oil and gas wells, 1 geothermal powerplant, and 20 metallic and non-metallic mines. Projected development of 20 oil and gas wells, 5 geothermal powerplants, and 37 metallic and non-metallic mines would occur.
Impacts on Watershed	Watershed conditions would improve on 143 miles of perennial streams. Another 397 miles of perennial streams would remain in current condition.	Watershed conditions would improve on 116 miles of perennial streams and degrade on 2 miles. Another 422 miles of perennial streams would remain in current condition.	Watershed conditions would improve on 135 miles of perennial streams and degrade on 14 miles. Another 391 miles of perennial streams would remain in current condition.

Alt. #4 **Ecosystem Diversity**	**Alt. #5** **Proposed Action**	**Alt. #6** **Commodity Development**	**Alt. #7** **No Wilderness/No Action**
Wilderness values protected and enhanced on 1,253,722 acres, assuming acquisition of 9,723 acres of state and private lands. Closure of 96 miles of roads and acquisition of 41,105 acres of mineral estate would further preserve wilderness values. On 1,414,398 acres not designated, wilderness values directly and indirectly impaired on 481,100 acres from projected activities. Two Bailey-Kuchler ecosystems, not currently represented in NWPS, added to system.	Wilderness values protected and enhanced on 1,138,573 acres, assuming acquisition of 9,723 acres of state and private lands. Closure of 96 miles of roads and acquisition of 41,105 acres of mineral estate would further preserve wilderness values. On 1,529,547 acres not designated, wilderness values directly and indirectly impaired on 521,400 acres from projected activities. Two Bailey-Kuchler ecosystems, not currently represented in NWPS, added to system.	Wilderness values protected and enhanced on 382,213 acres, assuming acquisition of 800 acres of state and private lands. Closure of 26 miles of roads and acquisition of 12,785 acres of mineral estate would further preserve wilderness values. On 2,273,321 acres not designated, wilderness values directly and indirectly impaired on 745,300 acres from projected activities. Two Bailey-Kuchler ecosystems, not currently represented in NWPS, added to system.	On 2,652,234 acres not designated, wilderness values directly and indirectly impaired on 783,700 acres from projected activities. Two Bailey-Kuchler ecosystems would remain unrepresented in NWPS.
A total of 1,216,648 acres (except for valid existing rights) withdrawn, precluding projected development 16 oil and wells, 2 geothermal powerplants, and 24 metallic and non-metallic mines. Projected development of 19 oil and gas wells, 4 geothermal powerplants, and 33 metallic and non-metallic mines would occur.	A total of 1,112,073 acres (except for valid existing rights) withdrawn, precluding projected development of 12 oil and gas wells, 1 geothermal powerplant, and 21 metallic and non-metallic mines. Projected development of 23 oil and gas wells, 5 geothermal powerplants, and 36 metallic and non-metallic mines would occur.	A total of 375,733 acres (except for valid existing rights) withdrawn. No foregone energy and mineral production. Projected development of 35 oil and gas wells, 6 geothermal powerplants and 57 metallic and non-metallic mines would occur.	Mineral exploration and development could continue on all lands in the WSAs, subject to limited constraints established in existing land-use plans. Projected development of 35 oil and gas wells, 6 geothermal powerplants, and 57 metallic and non-metallic mines would occur.
Improved watershed conditions on 166 miles of perennial steams; degraded watershed conditions on 14 miles. Another 360 miles of perennial streams would remain in current conditions.	Watershed conditions would improve on 166 miles of perennial streams and degrade on 14 miles. Another 360 miles of perennial streams would remain in current condition.	Watershed conditions would improve on 165 miles perennial streams and degrade on 72 miles. Another 303 miles would remain in current condition.	Watershed conditions would improve on 180 miles of perennial streams and degrade on 75 miles. Another 285 miles would remain in current condition.

Table 2-4. Comparison of Impacts (continued)

Impact Topics	Alt. #1 All Wilderness	Alt. #2 Wilderness Emphasis	Alt. #3 Conflict Res. Emphasis
Impacts on Vegetation	Vegetation change would occur on 13,170 acres. Riparian vegetation would improve on 128 miles of streams. Residual ground cover would increase in 7 WSAs due to reduced grazing. Possible disturbance to plants of special interest in 6 WSAs.	Vegetation change would occur on 30,120 acres. Riparian vegetation would improve on 129 miles of streams and decline on 2 miles. Residual ground cover would decrease in 8 WSAs and increase in 7 WSAs due to increased and decreased grazing, respectively. Possible disturbance to plants of special interest in 7 WSAs.	Vegetation change would occur on 151,130 acres. Riparian vegetation would improve on 164 miles of streams and decline on 12 miles. Residual ground cover would decrease in 23 WSAs and increase in 4 WSAs due to livestock use increases and decreases, respectively. Possible disturbance to special interest plants in 8 WSAs.
Impacts on Wildlife	Wildlife habitat protected. Habitat change/ reduction would occur on 12,030 acres; 128 miles of riparian habitat improved.	Wildlife habitat protected on 2,350,142 acres. Habitat change/ reduction would occur on 28,430 acres; 129 miles of riparian habitat improved and 2 miles degraded. Possible threat to special status species due to projected actions in 5 WSAs.	Wildlife habitat protected on 1,242,478 acres. Habitat change/ reduction would occur on 150,490 acres; 164 miles of riparian habitat improved and 12 miles degraded. Possible threat to special status species in 9 WSAs.
Impacts on Livestock Grazing	Overall livestock use would decrease by 3,328 AUMs (due to constraints in development of range improvements) from the current level of 153,288 AUMs.	Overall livestock use would increase by 538 AUMs. AUMs increased in 8 WSAs and decreased in 7 WSAs.	Overall livestock use would increase by 28,382 AUMs. AUMs increased in 23 WSAs and decreased in 4 WSAs.
Impacts on Utility Corridor Routing	Rerouting of potential corridors around 4 WSAs would add 17.1-28.6 miles to proposed routes.	Rerouting of potential corridors around 2 WSAs would add 7.4 miles to proposed routes.	No substantial shifts in the proposed corridors would occur.

Alt. #4 Ecosystem Diversity	Alt. #5 Proposed Action	Alt. #6 Commodity Development	Alt. #7 No Wilderness/No Action
Vegetation change would occur in 139,930 acres . Riparian vegetation would improve on 193 miles of streams and decline on 12 miles. Residual ground cover decreased in 22 WSAs and increased in 3 WSAs due to livestock grazing use increases and decreases, respectively. Possible disturbance to special interest plants in 8 WSAs.	Vegetation change would occur on 151,640 acres. Riparian vegetation would improve on 193 miles and decline on 12 miles. Residual ground cover decreased in 24 WSAs and increased in 3 WSAs due to livestock grazing use increases and decreases, respectively. Possible disturbance to special interest plants in 8 WSAs	Vegetation change would occur on 197,290 acres. Riparian vegetation would improve on 189 miles of streams and decline on 92 miles. Residual ground cover decreased in 30 WSAs and increased in 4 WSAs due to livestock use increases and decreases, respectively. Possible disturbance to special interest plants in 9 WSAs.	Vegetation change would occur on 217,660 acres. Riparian vegetation would improve on 191 miles of streams and decline on 92 miles. Residual ground cover decreased in 32 WSAs and increased in 4 WSAs due to livestock use increases and decreases, respectively. Possible disturbance to special interest plants in 8 WSAs.
Wildlife habitat protected on 1,243,999 acres. Habitat change/reduction on 139,230 acres; 193 miles of riparian habitat improved and 12 miles degraded. Possible threat to special status species in 8 WSAs.	Wildlife habitat protected on 1,128,850 acres. Habitat change/reduction on 150,990 acres. Riparian habitat improved on 193 miles of stream and degraded on 12 miles. Possible threat to special status species in 9 WSAs.	Wildlife habitat protected on 381,413 acres. Habitat change/reduction on 197,140 acres. Riparian habitat improved on 189 miles of streams and degraded on 92 miles. Possible threat to special status species in 15 WSAs.	Habitat change/reduction on 217,660 acres. Riparian habitat improved on 191 miles of stream and degraded on 92 miles. Possible threat to special status species in 15 WSAs.
Overall livestock use would increase by 35,213 AUMs. AUMs increased in 22 WSAs and decreased in 3 WSAs.	Overall livestock use would increase by 35,349 AUMs. AUMs increased in 24 WSAs and decreased in 3 WSAs.	Overall livestock use would increase by 56,019 AUMs. AUMs increased in 30 WSAs and decreased in 4 WSAs.	Overall livestock use would increase by 56,685 AUMs. AUMs increased in 32 WSAs and decreased in 4 WSAs.
No substantial shifts in the proposed corridors would occur.	No substantial shifts in the proposed corridors would occur.	No substantial shifts in the proposed corridors would occur.	There would be no impact on the proposed corridors.

Table 2-4. Comparison of Impacts (continued)

Impact Topics	Alt. #1 All Wilderness	Alt. #2 Wilderness Emphasis	Alt. #3 Conflict Res. Emphasis
Impacts on Wood Products Harvest	Average annual timber yield of 310 thousand board feed (Mbf) foregone.	Annual timber yield of 303 Mbf foregone. Annual harvest of 7 Mbf in 1 WSA allowed.	Annual timber yield of 94 Mbf foregone. Annual harvest of 216 Mbf in 5 WSAs allowed.
Impacts on Cultural and Paleontological Resources	No actions projected in vicinity of known cultural or paleontological sites.	No actions projected in vicinity of known cultural or paleontological sites.	Possible threat to known cultural sites in 2 WSAs due to projected actions. No actions projected in vicinity of known paleontological sites.
Impacts on Recreation Use	Overall recreation use estimated at 142,345 visitor days per year (net increase of 7,045). Increase in recreation use in 22 WSAs and decrease in 23 WSAs.	Overall recreation use estimated at 135,675 visitor days per year (net increase of 375). Increase in recreation use in 18 WSAs and decrease in 25 WSAs.	Overall recreation use estimated at 155,140 visitor days per year (net increase of 19,840). Increase in recreation use in 21 WSAs and decrease in 19 WSAs.
Impacts on Local Personal Income	Annual local personal income generated from resource outputs in WSAs would decrease by approximately $39,000.	Annual local personal income generated from resource outputs would decrease by approximately $71,000.	Annual local personal income generated from resource outputs would increase by approximately $553,000.

Alt. #4 Ecosystem Diversity	Alt. #5 Proposed Action	Alt. #6 Commodity Development	Alt. #7 No Wilderness/No Action
Annual timber yield of 310 Mbf foregone.	Annual timber yield of 154 Mbf foregone. Annual harvest of 156 Mbf in 4 WSAs allowed.	Annual timber yield of 154 Mbf foregone. Annual harvest of 156 Mbf in 4 WSAs allowed.	Annual timber yield unaffected, allowing harvest of 310 Mbf in 6 WSAs.
Possible threat to known cultural sites in 2 WSAs due to projected actions. No actions projected in vicinity of known paleontological sites.	Possible threat to known cultural sites in 2 WSAs due to projected actions. No actions projected in vicinity of known paleontological sites.	Possible threat to known cultural sites in 8 WSAs. None expected for known paleontological sites.	Possible threat to known cultural sites in 8 WSAs. None expected for known paleontological sites.
Overall recreation use estimated at 139,970 visitor days per year (net increase of 4,670). Increase in recreation use in 24 WSAs and decrease in 20 WSAs.	Overall recreation use estimated at 144,770 visitor days per year (net increase of 9,470). Increase in 22 WSAs and decrease in 18 WSAs.	Overall recreation use estimated at 153,120 visitor days per year (net increase of 17,820). Increase in 22 WSAs and decrease in 6 WSAs.	Overall recreation use estimated at 151, 640 visitor days per year (net increase of 16,340). Increase in recreation use in 18 WSAs and decrease in 4 WSAs.
Annual local personal income generated from resource outputs would increase by approximately $395,000.	Annual local personal income generated from resource outputs would increase by approximately $496,000.	Annual local personal income generated from resource outputs would increase by approximately $844,000.	Annual local personal income generated from resource outputs would increase by approximately $876,000.

BLM's Steelhead Falls WSA (OR-5-14), containing 3,114 acres, lies adjacent to the 9,955-acre Deschutes Canyon Further Planning Area in the Crooked River National Grassland, managed by the Ochoco National Forest. The suitability of the Steelhead Falls WSA is addressed in the Forest Service's Ochoco Forest Plan/EIS, which was for issued in August of 1989. That document recommends nonwilderness for both the Deschutes Canyon and Steelhead Falls study areas.

BLM's Homestead WSA (OR-6-2), containing 7,001 acres, adjoins 7,654 roadless acres in the Wallowa-Whitman National Forest which were designated for further planning in the Hells Canyon National Recreation Area Comprehensive Management Plan. All 14,655 acres are analyzed and addressed in this EIS. In addition, BLM's North Fork WSA (OR-5-31), containing 10,985 acres, adjoins 1,125 roadless acres in the Ochoco National Forest. All 12,110 acres are analyzed in this EIS. The Forest Service is the cooperating agency in this EIS with respect only to these two joint wilderness study areas. The Forest Service concurs with the proposed action for these two areas.

Other BLM wilderness study areas (Devils Garden, OR-1-2, and Aldrich Mountain, OR-2-103) adjoin national forest roadless areas which were released by the Oregon Wilderness Act of 1984. These adjoining areas were released from further review of wilderness values until the national forest plan revisions, expected to take place in the 1990s.

Wild and Scenic Rivers

In 1984 an Act of Congress was passed designating two segments of the Owyhee River in Oregon as components of the National Wild and Scenic Rivers System, to be administered as a wild river by the Secretary of the Interior. The upper segment is almost entirely within the Owyhee River Canyon WSA (OR-3-195), which is addressed in the Owyhee Canyonlands Wilderness EIS. Most of the lower segment, 50 miles from Crooked Creek to the Owyhee Reservoir, is within the Owyhee Breaks (OR-3-59) and Lower Owyhee Canyon (OR-3-110) WSAs.

Its designation as a Federal wild river has withdrawn from disposal mineral leasing and location of mining claims on all public lands within 0.25 mile on each side of the river where the mineral estate is owned by the Federal Government. The legislative record also states explicitly that livestock grazing may be allowed to continue within the boundary of the wild and scenic river corridor.

In 1988, the Omnibus Oregon Wild and Scenic Rivers Act was passed designating approximately 1,400 river miles on 40 rivers as wild, scenic or recreational river segments. Of these rivers, a total of 107.5 miles in four rivers flow through nine of the WSAs in this study. Boundary delineations and management plans are currently being prepared for these river segments. On the 62.6 river miles in six WSAs designated as wild, lands within one-quarter mile on each side of the river, where the mineral estate is owned by the Federal Government, were legislatively withdrawn from disposal, mineral leasing and location of mining claims.

Water Power and Water Storage Potential

Twelve of the wilderness study areas are affected by Federal designations for waterpower and water storage potential on streams and rivers. The designations are based on the Act of March 3, 1879, which created the U.S. Geological Survey, and the Pickett Act of June 25, 1910. From these two acts evolved power site classifications and power site reserves, both of which are intended to protect the potential for waterpower and water storage development on federal lands. Lands may also be designated by applications filed with the Federal Energy Regulatory Commission (FERC) for power development under the Federal Power Act, commonly referred to as "FERC withdrawals."

Table 2-5 summarizes the WSAs affected and the designations and approximate acreage withdrawn.

Most of the designations affecting the WSAs will likely be recommended for revocation at the time the withdrawals are reviewed by BLM or FERC. All of the power site reserves and classifications will be reviewed by the BLM Oregon State Office waterpower staff by 1991. The FERC withdrawals are also scheduled for review within the next few years and will be revoked where appropriate.

Most of the designated waterpower and water storage sites in WSAs lie along the Federally-designated wild river segment of the Owyhee River and the State Scenic stretches of the John Day and Owyhee Rivers. The Federal wild river designation precludes FERC licensing of any project under the Federal Power Act or support by any other Federal agency for the construction of any water resources project on or directly affecting the designated segment.

Oregon Scenic Waterways designations do not legally limit federal authority to construct dams, or FERC

Table 2-5. Wilderness Study Areas With Designations for Waterpower Potential

WSA No. (OR-)	Approximate Acreage Designated in WSA	Designation[1]
2-14	1,760	PSR No. 708
2-86E	2,520	PSR Nos. 61 & 220
3-33	200	PSR Nos. 175 & 260
3-47 and 3-59	1,760	PSR No. 3
3-110	6,040	PSR No. 3
5-1	2,800	PSR Nos. 24, 145 & 566
5-6	8,520	PSR Nos. 24, 145 & 566
5-8	1,840	PSR Nos. 24, 145 & 566
5-9	400	PSR No. 24 & PSC No. 383
6-2	300	PSR No. 77, PSC No. 421, & FERC Project Nos. 406 and 1971
6-3	670	PSR No. 77 & FERC Project Nos. 406 and 1971

[1] PSR = Power Site Reserve; PSC = Power Site Classification; FERC = Federal Energy Regulatory Commission.

authority to authorize dam construction. However, it is unlikely that any federal agency would contradict the intent of the State Scenic Waterways designations. Considering also the lack of current interest in developing any of the designated sites, the possibility of dam development is not considered relevant to a decision to recommend or not recommend the WSAs for wilderness and, therefore, is not addressed further in this EIS.

It should be noted that even wilderness designation does not absolutely foreclose dam construction, as the Wilderness Act provides that the President of the United States may authorize development of water projects in wilderness areas.

Other Federal Agencies

The Hawk Mountain WSA (OR-1-146A) lies adjacent to the Big Springs Table Unit, a 65,600-acre area administratively endorsed for wilderness in the Charles Sheldon National Wildlife Refuge in Nevada. The Sage Hen Hills WSA (OR-1-146B) is adjacent to the Sage Hen Hills Unit, a 21,800-acre unit of the wildlife refuge also administratively endorsed for wilderness.

The North Sisters Rocks (OR-12-8) and Zwagg Island (OR-12-14) WSAs are among the few offshore Oregon islands not a part of either the Three Arch Rocks National Wildlife Refuge or the Oregon Islands National Wildlife Refuge. Both of these refuges are designated wilderness except for 95 acres of the latter which are being studied by the U. S. Fish and Wildlife Service for possible wilderness designation. BLM manages three wilderness islands in the vicinity of Sunset Bay.

The U. S. Fish and Wildlife Service funds a program of aerial shooting of coyotes to reduce predation on livestock. This program is conducted in a number of WSAs. Under wilderness management, only those predator control methods which can be directed at eliminating individual problem animals while presenting the least possible hazard to other animals or to wilderness visitors may be authorized, and only on a case-by-case basis with State Director approval.

The Soil Conservation Service conducts winter snow surveys, by aerial checks of snow markers, in some WSAs. Such practices are permitted in wilderness areas if they were established prior to wilderness designation.

State and Local Governments

The Intergovernmental Relations Division for the State of Oregon acts as a clearinghouse for the various state agencies. Agency review of BLM planning and major actions is coordinated through this clearinghouse. Planning is also coordinated with county commissioners and/or county planning commissions.

Under Oregon Senate Bill 100, all counties in Oregon are required to develop and adopt comprehensive land use controls consistent with statewide planning goals and guidelines developed by the Land Conservation and Development Commission (LCDC). None of the 16 counties within the EIS area in Oregon, Idaho and Nevada have identified any conflicts between the proposed action and county plans. Generally, consistency of the EIS alternatives with county plans parallels consistency with State planning goals. Table 2-6 displays consistency with these goals.

Other State goals and objectives considered relevant to the wilderness issue include the Basic Objectives of the Forestry Program for Oregon and the State of Oregon Wildlife Goals. Table 2-7 displays consistency with the forestry objectives, while table 2-8 addresses consistency with the wildlife goals.

In a number of WSAs, the Oregon Department of Fish and Wildlife (ODFW) has identified ancestral bighorn sheep range as suitable for reintroduction of the sheep. ODFW proposes to reintroduce bighorns in those areas as surplus animals become available due to overpopulation in other locations (see Chapter 3, Wildlife, for more specific information). ODFW conducts aerial big game censuses in many WSAs, as well as ground counts of sage grouse and chukar by vehicle in some WSAs. They also aerially stock Wildhorse Lake in the High Steens WSA (OR-2-85F) with fish. Aircraft use for such purposes would be permitted where established prior to wilderness designation, although more primitive means would be encouraged where practical. Constraints on vehicle use could limit ground surveys. ODFW uses vehicles to maintain wildlife guzzlers in a few WSAs. Enforcement of State hunting and fishing laws involves the use of both aircraft and motor vehicles in many WSAs.

The WSAs in the EIS area fall within 17 ODFW wildlife management units covering a total of over 33,000 square miles. For each of the wildlife units, ODFW has established population or male-to-female ratio objectives for various species of wildlife. Since the wildlife units are very large, averaging approximately 1.25 million acres in size for those affecting the WSAs, specific actions in the WSAs would have little effect on overall management objectives. However, in a few WSAs where a particular objective is specific to an area that is wholly or mostly within a WSA, projected activities in a WSA's proposed action have been identified as potentially conflicting with ODFW's management objectives (e.g., ODFW's bighorn sheep population objective for the Alvord Peak area). The WSA-specific appendices summarize the objectives of the pertinent wildlife management units and discuss consistency of the proposed action with ODFW's objectives.

The Desert Trail, a part of the Oregon State Recreational Trails System, is identified to cross Oregon in a north-south direction. Of 65 miles of trail that have been marked, 11 miles traverse the Pueblo Mountains WSA (OR-2-81) and 15 miles pass through the High Steens WSA (OR-2-85F) from its southern end to Wildhorse Lake. Most of the balance of the trail is defined only on maps. As proposed, it crosses the Blitzen River WSA (OR-2-86E) and follows the boundary road between High Steens and Little Blitzen Gorge (OR-2-86F) WSAs. A cooperative management agreement between BLM and the Desert Trail Association outlines respective responsibilities for improvements on these segments of the trail. A June 1982 report by the National Park Service (Final Desert National Scenic Trail Feasibility Report and Environmental Assessment) recommended that a Desert National Scenic Trail not be authorized.

A proposed State Recreation Trail to link the Pacific Crest National Scenic Trail and the Desert Trail, tentatively named the Pacific Crest to Desert Trail (Ochoco-Malheur), would pass through the Aldrich Mountain WSA (OR-2-103).

The WSAs are currently designated Air Quality Class II (areas where deterioration that would normally accompany moderate, well-controlled growth would not be considered significant) as is most of the State of Oregon except for certain National Park and wilderness areas, which are Class I. After designation of any of these WSAs as wilderness by Congress, the State of Oregon could recommend to the U. S. Environmental Protection Agency (EPA) redesignation of any wilderness area at least 10,000 acres in size as Class I (areas where nearly any air quality deterioration would be considered significant, thus allowing little or no nearby energy or industrial development). Any such proposal must include a social, economic and environmental analysis and would be subject to public hearings before EPA's consideration for approval.

Indian Tribes

The Thirtymile (OR-5-1), Lower John Day (OR-5-6), North Pole Ridge (OR-5-8), Spring Basin (OR-5-9), Badlands (OR-5-21), North Fork (OR-5-31), South Fork (OR-5-33), Sand Hollow (OR-5-34), Aldrich Mountain (OR-2-103), McGraw Creek (OR-6-1), Homestead (OR-6-2) and Sheep Mountain (OR-6-3) WSAs lie within areas which were ceded to the U.S. Government by the Warm Springs and Nez Perce Indian Tribes by ratified treaties (the Middle Oregon Treaty and Nez Perce Treaty, respectively). These treaties reserved to the Indians rights for hunting, fishing and gathering in usual and accustomed places, and grazing stock on unclaimed land.

Utility Corridors and Facility Sites

From 1978-1983, BLM land use planning in Oregon resulted in the designation of utility/transportation corridors for all existing major facilities, i.e., county roads, state highways, railroads, regional pipelines and electric (66 kV or larger) transmission lines. The designated corridors vary in width, but are generally from 2,000 feet to 2 miles wide and centered on existing facility lines. Relatively small sites were also designated to facilitate common locations for microwave and radio or television signal relay stations.

Table 2-6. Relationship of the Alternatives to LCDC Statewide and Coastal Goals[1]

LCDC Goal Number and Description		Discussion
1	To insure citizen involvement in all phases of the planning process.	BLM's land use planning process provides for public input at various stages— from assistance in the inventory to development of alternatives, environmental analysis, and the recommendation to Congress.
2	To establish a land-use and policy framework as a basis for all decisions and actions.	The alternatives have been developed in accordance with the land-use planning process authorized by the Federal Land Policy and Management Act of 1976, which provides a policy framework for all decisions and actions. The study areas are located in 14 Oregon counties: Lake, Harney, Grant, Malheur, Deschutes, Gilliam, Wallowa, Sherman, Wheeler, Crook, Baker, Jackson, Klamath and Curry. BLM District Manager reviews indicate that the existing BLM management plans are in conformance with the relevant, LCDC-acknowledged, county comprehensive plan elements. Continuous BLM/county goverment consultation facilitates mutual knowledge of the status and content of each agency's natural resource related plans, programs and policies.
4	To conserve forest lands for forest uses.	Nine wilderness study areas contain a total of 5,719 acres of commercial forest lands of which 1,268 acres are currently available for the sustained yield of commercial wood fiber. Three additional WSAs have potential for production of minor forest products (i.e., firewood, poles, posts, etc.). Alternatives 1 through 6 would remove all or portions of this acreage from wood product harvest, but all alternatives would preserve both commercial and noncommercial forest lands for watershed protection, wildlife and fisheries habitat, recreation and other forest uses.
5	To conserve open space and protect natural and scenic resources.	All alternatives conserve open space. Natural and scenic resources were considered in the development of all alternatives and are most protected by alternatives 1 and 2 and least protected by alternatives 6 and 7. The LCDC definitions for cultural, historic, natural, scenic and wilderness areas are essentially the same as those used by BLM in this analysis. Research natural areas, outstanding natural areas, historic sites or areas, wild and scenic rivers, wetlands and trail systems would be protected or enhanced under all alternatives based on existing administrative or legislative designations.

Table 2-6. Relationship of the Alternatives to LCDC Statewide and Coastal Goals[1]

LCDC Goal Number and Description		Discussion
6	To maintain and improve the quality of the air, water and land resources.	Water quality conditions and trends would be maintained or improved under alternative 1, with quality of some streams potentially degraded by projected mineral, livestock, timber and utility corridor activities under alternatives 2 through 7. Air quality would not be significantly impacted.
8	To satisfy the recreational needs of the citizens of the State and visitors.	Under all alternatives, opportunities would be provided to meet recreational needs. Alternatives 1 and 2 would displace a substantial amount of vehicle-oriented recreation to other areas while providing maximum opportunities for primitive recreation. Alternatives 6 and 7 could significantly reduce primitive recreation opportunities while having little effect on vehicle-oriented recreation.
9	To diversify and improve the economy of the State.	All alternatives would provide for some economic gains due to projected mineral development. Gains in the local and State economies would be greatest under alternatives 6 and 7, with alternatives 1 and 2 showing some overall loss in local personal income (see table 4-15).
12	To provide and encourage a safe, convenient and economic transportation system.	Alternatives 2 through 6 would have an effect on the transportation system. Closure of roads separating some WSAs in these alternatives (see table 2-3) would have minor impacts, as the roads involved are used primarily for recreation access and land management activities. Closure would not significantly hamper management activities and would displace, but not eliminate, some recreation activities.
13	To conserve energy	Alternatives 1 and 2 would have an effect on future energy transportation facility siting and could increase electric line-load losses.
17	To conserve and protect the resources of costal shorelands.	The only WSAs relevant to this goal are the two small offshore island WSAs. All alternatives would conserve and protect these resources and provide BLM management direction compatible with the characteristics of the adjacent coastal waters.[2]

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[1] LCDC goals not generally applicable to the alternatives are; 3. Agricultureal Lands; 7. Area Subject to Natural Disasters and Hazards; 10. Housing; 11. Public Facilities and Services; 14. Urbanization; 15. Willamette Greenway; 16. Estuarine Resources; 18. Beaches and Dunes; and 19. Ocean Resources

[2] Although alternative 7 would leave the islands available for jetty rock quarrying, such development is considered unlikely. Any proposal would require a separate environmental analysis and determination of consistency with the approved Oregon Coastal Zone Management Plan.

Table 2-7. Consistency of the Alternatives with Basic Objectives of the Forestry Program for Oregon[1]

Basic Objective	Discussion[2]
To maintain the maximum commercial forest land base consistent with resource uses while assuring environmental quality.	Alternatives 3, 5, 6 and 7 are consistent with the benchmark (approximately 1,268 acres) of currently available commercial forest land base. Alternatives 1, 2, and 4 are inconsistent. Environmental quality would be protected to the degree specified in the Oregon Forest Practices Act. Table 3-9 displays the available commercial forest land by WSA.
To maintain or increase the allowable annual harvest level to its fullest potential to offset potential socioeconomic impacts.	Alternatives 3, 5, 6 and 7 are consistent with the benchmark of a 145 Mbf annual sustainable harvest level, while alternatives 1, 2, and 4 are inconsistent. The level of cutting that the land base can sustain is dependent on the number of acres allocated to timber production, the level of management the land base receives and the productivity of the land. Table 4-12 displays the short-term losses to commercial timber production.
To identify and implement the levels of intensive forest management required to achieve maximum growth and harvest.	A full range of intensive timber management practices for optimizing timber production would be implemented on the available commercial forest land base under alternatives 3, 5, 6, and 7. New and improved practices would be implemented consistent with technological advances.
To maintain community stability by remaining flexible for increases in future harvest levels that would offset projected shortages.	Alternatives 3, 5, 6, and 7 are most consistent with the objective of making land allocations which do not substantially decrease the commercial forest land base and thereby contribute to projected timber supply declines. Alternatives 1, 2, and 4 reduce flexibility to increase or maintain current timber harvests and affect stability of timber-dependent communities by removing 1,170 to 1,268 acres from the commercial forest land base, and reducing average annual timber harvest by 149 to 156 Mbf.

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[1] Based upon the Oregon State Department of Forestry, Forestry Program for Oregon, published 1977 and updated 1982.

[2] Discussions are based on currently available commercial forest lands only. As indicated in Table 4-12, however, alternatives 1 through 6 would affect an additional 334 to 605 acres (with an average annual yield of 94 to 154 Mbf) of potentially available commercial forest lands.

Table 2-8. Consistency of the Alternatives with State of Oregon Wildlife Goals

Goal	Discussion
1) To maintain all species of wildlife at optimum levels and prevent the serious depletion of any indigenous species.	Maintenance or enhancement of wildlife habitat would vary among alternatives but alternatives 1 through 5 would generally maintain or increase population levels while preventing depletion of species. Wilderness designation would perpetuate existing unique ecosystems which would benefit wildlife by ensuring habitat diversity in the managed rangelands. Ecosystem diversity would be greatest in alternatives 1 through 5; however other existing designations for Wild and Scenic Rivers, Research Natural Areas and Areas of Critical Environmental Concern would protect some areas and ecosystems in alternatives 6 and 7. Road and ORV closures would enhance habitat quality for species which are largely intolerant of human activity. Tables 2-4, 4-5 and 4-8 note that timber harvests, rangeland vegetation manipulation and potential minerals exploration and mining activities would impact wildlife habitat in inverse proportion to the acres designated as wilderness. Some sagebrush and juniper control, in conjunction with range seedings, would benefit antelope and other species but would reduce habitat diversity with subsequent adverse effects on local populations of nongame species.
2) To develop and manage the lands and waters of the State in a manner that will enhance the production and public enjoyment of wildlife.	Wilderness designation would preclude or make more costly development of some wildlife and livestock water and seeding improvements. This could result in foregone opportunities to expand some wildlife populations. Elimination of timber harvests and mining (other than existing valid claims) would protect some existing habitat values. Precluded vegetative manipulation activities would eliminate some habitat management options, but would maintain diversity.
3) To regulate wildlife populations and the public enjoyment of wildlife in a manner that is compatible with primary uses of the land and waters of the state and provides optimum public recreation benefits.	In all alternatives, increased wildlife populations could enhance the quality of public enjoyment of wildlife. Vehicle-dependent hunting and fishing activity would be displaced from areas designated wilderness, resulting in lower quality experiences for some persons whose activity is displaced, but also creating higher quality experiences for some of those who continue to hunt and fish there. Non-consumptive enjoyment of wildlife by hikers, floatboaters, etc. would be highly consistent with wilderness management objectives and would increase in proportion to acres designated except where previous designations (i.e. wild and scenic rivers) provide comparable management direction for wilderness study areas.
4) To develop and maintain public access to the lands and waters of the State and the wildlife resources thereon.	Road and ORV closures would restrict motorized public access.

Table 2-8. Consistency of the Alternatives with State of Oregon Wildlife Goals (continued)

Goal	Discussion
5) To permit an orderly and equitable utilization of available wildlife.	Public access and use restrictions could hinder orderly and equitable utilization (including non-consumptive enjoyment) of wildlife in direct proportion to the acres designated as wilderness. On the other hand, wilderness designation would ensure that those who enjoy wildlife in a primitive setting would be able to continue to do so.

BLM's utility corridor review is guided by the Federal Land Policy and Management Act of 1976 (FLPMA), Sec. 202, Land Use Planning, and Sec. 503, Right-of-Way Corridors. Application of these mandates is guided by the BLM right-of-way regulations (43 CFR 2800) and planning regulations (43 CFR 1601) as well as Washington, D.C. and Oregon State Office instruction memoranda.

BLM also used the 1980 Western Regional Corridor Study to identify other potential utility corridors and their proponents. This study was prepared by the Western Regional Corridor Study Committee, an *ad hoc* group of approximately 100 public and private electric utilities, pipeline companies, communication companies and railroads. The intent of the study was to provide BLM, the Forest Service and other interested agencies with a schematic base of potential utility and transportation corridors to aid in the planning process.

Several WSAs are affected by proposed utility corridors. For more information regarding specific corridor proposals and potential impacts of wilderness designation or nondesignation, see the "Utility Corridor Routing and Communication Facility Siting" discussions in Chapters 3 and 4.

Chapter 3
Affected Environment

Abert Rim WSA (OR-1-101)

Introduction

This chapter describes the existing environment of the EIS area by resource for purposes of identifying potential impacts of the proposed action and alternatives in the following chapter. Although all resources were considered during the planning process, only those relevant to the issues identified in chapter 1 and impacts outlined in chapter 4 are addressed in this chapter.

Although the WSAs are presently managed under the BLM Interim Management Policy (IMP), which restricts most activities that could potentially impair wilderness values, this chapter describes the affected environment as it would be managed under BLM land use plans without the temporary protection of the IMP.

Some resources or resource management issues (such as vegetation and some wildlife and water resource management issues) are not directly discussed under separate resource headings in this chapter, although they are analyzed individually in chapter 4. To avoid duplication, these issues are instead discussed under other appropriate headings (e.g., vegetation under ecosystem diversity in the Wilderness Values section of this chapter, certain wildlife values under the Wilderness Values section, and some wildlife or water management issues under the Interrelationships section of chapter 2).

General Environment

All but 4 of the 85 wilderness study areas (WSAs) are located east of the Cascade Mountains. Most of the acreage is in southern Harney and Malheur Counties, in the southeast corner of the state. Smaller amounts of land under wilderness study are located in Lake, Crook, Deschutes, Grant, Klamath, Sherman, Wallowa, Wheeler, Gilliam and Baker Counties in eastern Oregon, in Jackson and Curry Counties in western Oregon, in Owyhee County in Idaho, and in Humboldt County in Nevada. Table 3-1 lists the amount of land under study in each county.

Most BLM-administered land in eastern Oregon is in the more arid parts of the region, and the same is true for the study areas. Winters are long, cool and moist, and summers are short, warm and dry. Average annual precipitation ranges from 5 inches in the Alvord Desert WSA (OR-2-74) to 30 inches in the High Steens WSA (OR-2-85F). Most of the study areas receive about 10 to 15 inches of precipitation per year. Almost half of the precipitation falls from November through February, much of it as snow. Spring rains come in May and June, while rainfall in July, August and September usually is light.

The study areas in this EIS are located in eight physiographic provinces as identified in the *Oregon Natural Heritage Plan* (1981). Over half of the study acreage in eastern Oregon is in the Basin and Range Province. Terrain in the province consists of a series of fault-block mountains enclosing basins with interior drainages. Much of the area between the mountains is rolling, with low relief. Most of the precipitous fault scarps in the Oregon portion of the province, including Diablo Mountain, Fish Creek Rim, Abert Rim, Catlow Rim, Steens Mountain and the Pueblo Mountains, are in study areas.

The Trout Creek Mountains have steep scarp faces on the east and south sides, but much of the range looks like a high plateau sloping to the north and cut by deep canyons. Steens Mountain was glaciated, and all of the major drainages on the west side of the mountain have U-shaped valleys and cirques. Shallow, saline lakes and playas ranging in size from less than an acre to several thousand acres are located throughout the province. In most years, the playas contain water for only short periods of the year. A portion of Summer Lake, one of the largest saline lakes in eastern Oregon, is included in the Diablo Mountain WSA (OR-1-58). A portion of the Alvord Desert and all of Coyote Lake, two of the largest playas in the province, are in the Alvord Desert WSA.

Almost one-third of the study area acreage is in the Owyhee Uplands Province. It is a high, gently rolling plateau which, for the most part, slopes gently to the north. Most of the province is drained by the Owyhee River. The river and its major tributary in Oregon, the West Little Owyhee, have carved deep, vertical-walled canyons in the plateau. As is the case in most of eastern Oregon, volcanic activity was responsible for much of the landscape in the Owyhee Uplands Province.

Relatively recent (in geologic time) lava flows cover much of the Jordan Craters WSA (OR-3-128), and somewhat older flows cover much of the Clarks Butte (OR-3-120) and Saddle Butte (OR-3-111) WSAs. Edges of lava flows form low rims in many of the other study areas. Volcanic tuff in the Honeycombs WSA (OR-3-77A) has eroded into unusual and picturesque formations. The moderate to steep slopes in study areas in the north part of the province were cut by streams flowing into the lower Malheur and Owyhee Rivers.

Table 3-1. Acres of WSAs in this EIS by County

Oregon Counties	Acres
Baker	21,695
Crook	93,322
Curry	8
Deschutes	29,166
Gilliam	16,122
Grant	9,395
Harney	1,047,711
Jackson	5,640
Klamath	334
Lake	298,110
Malheur	1,058,680
Sherman	17,372
Wallowa	497
Wheeler	5,982
Subtotal	**2,604,034**
Idaho County	
Owyhee	34,400
Subtotal	**34,400**
Nevada County	
Humboldt	13,800
Subtotal	**13,800**
Total	**2,652,234**

About one-tenth of the land in the eastern Oregon study areas falls in the High Lava Plains and Columbia Basin Physiographic Province. Much of the High Lava Plains section is formed by young lava flows of moderate relief. Cinder cones and basaltic buttes are scattered throughout the plains. In parts of the province, older volcanic flows are covered by lake deposits and wind blown materials creating a gently rolling landscape. Many of the streams are seasonal. The lava flows interrupted stream patterns, and most of the drainages have no outlets. Playas are common.

The study areas are a cross-section of the variety of landscapes in the province. The Devils Garden (OR-1-2), Squaw Ridge (OR-1-3) and Four Craters Lava Bed (OR-1-22) WSAs contain recent lava flows and other volcanic features. The Badlands WSA (OR-5-21) is a maze of low lava ridges separated by small sandy basins.

Most slopes in the Columbia Basin section of the province are moderate. The exceptions are the canyons cut by major rivers. Three of the four study areas in the Columbia Basin are in the 1,600-foot-deep canyon of the John Day River. The fourth is in the rolling uplands above the river.

About 2 percent of the total study area land is on the edge of the Ochoco, Blue and Wallowa Mountains Province. The North Fork (OR-5-31) and Malheur River-Bluebucket Creek (OR-2-14) WSAs contain deep canyons in the transition zone between the mountain province and the lava plains to the south. The Pine Creek (OR-2-98A), Sheep Gulch (OR-2-98C) and Indian Creek (OR-2-980) WSAs are on the flanks of Strawberry Mountain. The McGraw Creek (OR-6-1), Homestead (OR-6-2) and Sheep Mountain (OR-6-3) WSAs rise steeply from the Hells Canyon of the Snake River.

The eastern Oregon study areas are in, or at the edge of, the extensive deserts and grasslands which lie between the Cascade and Rocky Mountain ranges. Sagebrush, bunchgrasses and forbs are the most common vegetation, but many other kinds of plants also grow in the areas. Examples of other vegetation include delicate ferns in lava fissures, salt-tolerant shrubs and grasses, groves of aspen and mountain mahogany, low-growing alpine plants, ponderosa pine and Douglas fir in the transition zone between the Ochoco-Blue-Wallowa Mountains and the desert, extensive stands of juniper, and streamside oases of grasses and shrubs.

The Mountain Lakes WSA (OR-11-1) is in the Eastern Slopes, Oregon Cascades Physiographic Province. Sparse stands of mixed conifer forests and dense brushfields grow on its steep slopes.

The Soda Mountain WSA (OR-11-17) is in the Siskiyou Mountains and Western Slopes and Crest Physiographic Provinces of southwestern Oregon. The Western Oregon Interior Valleys Province intermingles from the north. The WSA lies on the steep, south-facing slopes of Soda Mountain. Stands of coniferous and hardwood trees are interspersed with dense brushfields and open grassy slopes.

The Zwagg Island (OR-12-14) and North Sisters Rocks (OR-12-8) WSAs are small, steep-sided islands connected to the mainland by sandy beaches during low tides. Ocean front shrubs grow on the islands.

Wilderness Values

The study areas vary widely in size and in other ways, but are wilderness in character. Wilderness characteristics considered in the review include an area's size, naturalness, opportunities for solitude or primitive types of recreation, and special features such as ecological, geological or other features of scientific, educational, scenic or historical value. Other wilderness-related values considered in the review include (1) the benefits to other multiple resource values and uses which wilderness designation could ensure, and (2) the extent to which designation of BLM-administered lands as wilderness would increase diversity in the National Wilderness Preservation System.

Naturalness

All of the study areas are remnants of the natural landscape that existed in primitive times. Most of them are located in the most remote and least developed corner of the State, and they are the most natural parts of the region.

All of the study areas contain some indications of human activity, but as the framers of the Wilderness Act recognized, there is virtually no area left in the country that is totally devoid of human activity. To use a phrase in the Wilderness Act, the study areas "generally appear to have been affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable."

Almost all of the study areas are grazed by livestock, and most of the evidence of human activity is associated with management of livestock. This includes vehicle tracks (or "ways," as they are called in the wilderness review), waterholes, reservoirs, small box-like structures installed at springs to collect water, buried water pipelines, troughs and fences. Some study areas also contain guzzlers, small aprons used to collect rainwater or snowmelt for wildlife. Evidences of past mining activities, primarily prospecting, remain in some study areas.

On some BLM lands, such ways and developments are obvious reminders of human influence. For this reason, it was determined during the wilderness inventory that some roadless areas did not have wilderness characteristics. In the roadless areas that became study areas, however, ways and developments are substantially unnoticeable because they are screened by topography or vegetation and are visible for only short distances. Even within the parts of the study areas where one can see developments, most affect the apparent naturalness to only a limited extent.

During the wilderness inventory, the influences of developments and activities outside the roadless areas were not considered unless they were so imposing that they could not be avoided. During the wilderness studies, the influences of such developments and activities on the wilderness values of the study areas were examined more closely. In a few areas, those influences were found to reduce wilderness values on the periphery.

Sagebrush is the dominant plant in many study areas, and there are indications that the plant is more common now than it was 100 years ago because of past overgrazing by livestock and the suppression of wildfire. For the same reasons, western juniper may be more common in some parts of eastern Oregon than it was 100 years ago. During the wilderness inventory, some contended that the study areas could not be considered to be in a natural condition because of the possible changes in the composition of the vegetation. BLM's position is that natural ecological processes continue to be the overwhelmingly dominant forces at work in the formation of vegetative patterns in the study areas, and that they are in an essentially natural condition.

Opportunities for Solitude and Primitive Types of Recreation

Almost all of the study areas offer outstanding opportunities for a person to be alone in a natural environment, to be removed from the presence of others in a setting that contains few reminders that others have been there in the past. For many, the vastness of the desert contributes to a sense of solitude that is deeper than that experienced in the more confined setting of a forest.

Military pilots fly low-elevation training missions over several of the study areas, and the aircraft can momentarily disrupt a visitor's solitude. Flight schedules vary considerably. At times, several aircraft can be seen and heard in a single day, but weeks can go by without any flights.

Most of the study areas offer outstanding opportunities for primitive types of recreation. Opportunities range from backpacking across the broad expanses of the Basque Hills; hiking the Desert Trail across the Pueblo Mountains; viewing expansive desert vistas from the heights of Diablo Mountain, Fish Creek Rim, Abert Rim and Steens Mountain; exploring the maze of lava ridges and sandy basins in the Badlands; photographing fields of wildflowers in the Sheepshead Mountains; fishing in the Malheur River, Bluebucket Creek and the North and South Forks of the Crooked River; to floating the John Day and Owyhee Rivers.

Special Features

In many of the study areas, ecological, geological and other features of scientific, educational, scenic or historical value are as significant, in terms of the area's wilderness character, as the opportunities afforded for solitude or primitive types of recreation. The areas contain a wide range of such features. For example, geologic features in the WSAs include lava fields and associated volcanic features, an extensive system of lava tubes, a complex, maze-like system of low basalt ridges, picturesque or unusual erosional forms, the largest inland system of moving sand dunes in Oregon, landforms carved by glaciers, the basalt neck of an eroded volcano, and hot springs.

Special botanical features in the WSAs include uncommon plant communities; diverse assemblages of plants; relatively undisturbed communities of native bunchgrasses; pristine streamside vegetative communities; isolated stands of ponderosa pine in the desert; and plants of special interest (i.e., Federal candidate species (categories 1 and 2) and plants on lists 1 and 2 of the Oregon Heritage Plan's "Rare, Threatened, and Endangered Plants and Animals of Oregon").

The WSAs provide habitat for many kinds of animals, but some animals living in the areas are particularly noteworthy from a wilderness standpoint. Several WSAs provide habitat for the northern bald eagle, Federally listed as threatened in Oregon. Animals commonly associated with habitats similar to those found in wilderness—large areas of undisturbed habitat free from human disturbance—are referred to as wilderness-associated wildlife, and the WSAs contain several such species.

Cougar and bobcat, wilderness-associated species with restricted ranges in the desert, live in WSAs in the Trout Creek Mountains. The Soda Mountain WSA is home to cougar, bobcat and black bear, another wilderness-associated species.

Bighorn sheep, a wilderness-associated animal once eliminated in Oregon, has been reintroduced in several WSAs, and plans have been drawn to reintroduce bighorn sheep in other WSAs in the future. The Fish Creek Rim WSA is a potential site for the reintroduction of the peregrine falcon.

The kit fox, on the State of Oregon's list of "threatened" species, may live in several WSAs east of the Alvord Desert.

The Whitehorse cutthroat trout, a federal candidate for listing as a threatened or endangered species, occurs in WSAs on Steens Mountain and in the Trout Creek Mountains. WSAs on the Lower John Day River provide habitat for steelhead trout and chinook salmon, anadromous fish whose populations have been declining throughout the Northwest.

The study areas on Steens Mountain contain strutting grounds for sage grouse, another Federal candidate for listing as a threatened or endangered species. Several study areas are home to unusually large concentrations of raptors. The following animals are also Federal candidates for listing as threatened or endangered species and can be found in some of the study areas: snowy plover, redband trout, Townsend's big-ear bat, long-billed curlew, ferruginous and Swainson's hawks, and the Sheldon tui chub.

Many WSAs contain crucial deer winter range, and a smaller number provide crucial antelope winter range. The High Steens WSA (OR-2-85F) and Little Blitzen Gorge WSA (OR-2-86F) contain the two known populations of pika in southeastern Oregon and water shrew in eastern Oregon.

Most of the WSAs probably contain some cultural resources. Particularly noteworthy archeological or historic sites have been discovered in several WSAs.

Table 3-2 shows the principal special wilderness features in the study areas.

Diversity of the National Wilderness Preservation System

One of the several criteria used to decide whether to recommend an area for wilderness designation is the extent to which designation would contribute to the diversity of the National Wilderness Preservation System. The diversity of the system is considered from three perspectives:

1. Ecosystems and landforms in wilderness areas.

2. Opportunities for solitude or primitive recreation in wilderness areas within a day's driving time (5 hours) of major population centers (standard metropolitan statistical areas).

3. The geographic distribution of wilderness areas.

The analysis of diversity in the National Wilderness Preservation System includes a consideration of existing and potential BLM wilderness areas as well as existing U.S. Forest Service, National Park Service and U.S. Fish and Wildlife Service wilderness areas.

Ecosystems and Landforms

Wilderness designation is a means of preserving examples of ecosystems and landforms in an unimpaired condition for future generations.

To provide a uniform basis for comparing natural systems and landforms of existing and potential wilderness areas, all BLM wilderness studies use the Bailey-Kuchler system for classifying lands. This system was also used by the Forest Service in its wilderness studies. It provides a broad overview of the ecosystem geography of the United States and makes it possible to determine which ecosystems are represented in existing and potential wilderness throughout the country.

The Bailey-Kuchler classification system is composed of two conceptual building blocks. The broader, or more generalized, building block is that of the ecoregion. An “ecoregion” is a continuous geographical area characterized by one or more important ecological associations that differ, at least in proportional area covered, from the associations of adjacent regions. In general, ecoregions are characterized by distinctive communities of plants and animals, climate, landform, soil, vegetation and ecological climax. There are four hierarchal levels of ecoregions in the system, but only the top three levels have been mapped. The third-level ecoregions, which are called provinces, are used in wilderness studies since each province is unique to the first and second levels of ecoregions in the system.

The other, more detailed, building block in the Bailey-Kuchler classification system is an area’s potential natural vegetation. It serves as an indicator of the fourth, and most detailed, level of ecoregion. Potential natural vegetation is the vegetation that would exist today if humans were removed from the scene and plant succession telescoped into a single moment.

Most of the eastern Oregon study areas are located in the Intermountain Sagebrush Province; the remainder are in the Rocky Mountain Forest Province and the Palouse Grassland Province. In western Oregon, Mountain Lakes (OR-11-1), North Sisters Rock (OR-12-8) and Zwagg Island (OR-12-14) WSAs are in the Pacific Forest Province and the Soda Mountain WSA (OR-11-17) is in the Sierran Forest and Pacific Forest Provinces. Table 3-3 lists the acreages of: (1) the several types of potential natural vegetation in existing wilderness areas nationwide, and (2) the same type of potential natural vegetation provinces represented in areas under study for wilderness.

BLM’s wilderness study policy allows for supplementing the Bailey-Kuchler system to identify ecosystems and landforms at a finer level of detail than a nationwide land classification system can provide. In Oregon, the system used in the Oregon Natural Heritage Plan (ONHP) to classify terrestrial ecosystems was adopted as a means of analyzing the ecological diversity of the study areas in more detail. The system was developed by the Oregon Natural Heritage Advisory Council and The Nature Conservancy. The council is an official state board whose members are appointed by the Governor. The Nature Conservancy is a private, nonprofit organization.

The Oregon Natural Heritage Plan was prepared to fulfill the requirements of Oregon law and was adopted by the State of Oregon as a guideline for preservation of natural areas. The classification system includes separate lists of vegetative communities for each of nine physiographic provinces in the state. The provinces are the same as those described in the previous General Environment section and were defined on the basis of similarity of climate, geology, geomorphology, soils and vegetation.

Sufficient data are not available to uniformly map the vegetative communities and calculate acreages represented in all of the study areas. (See Table 4-3 for a list of the vegetative communities in each of the physiographic provinces that are represented in one or more of the WSAs in this EIS.) Some vegetative communities are listed in more than one province. This occurs when an ecosystem contains similar dominant species but has different complements of associated species in, or different positions in the environments of, the various provinces.

Proximity to Population Centers

House Report Number 95-540 on the Endangered American Wilderness Act of 1978 states that one of the goals of Congress is “creating parks and locating wilderness areas within close proximity to population centers.” Therefore, one of the many criteria used to decide whether to recommend an area for wilderness designation is whether it is within a day’s driving time of a major population center.

Table 3-2. Special Wilderness Features in WSAs

		Geologic Features				Plants		
WSA No. (OR-)	WSA Name	Lava Fields and Related Features	High Fault-Block Scarps	Unusual Erosional Forms	Other Geologic Features	Uncommon Plant Communities or Diverse Plant Assemblages	Plants of Special Interest	Other Botanical Features
1-2	Devils Garden Lava Bed	X			[8]			[15]
1-3	Squaw Ridge Lava Bed	X						[12,15]
1-22	Four Craters Lava Bed	X						
1-24	Sand Dunes				[1]			
1-58	Diablo Mountain							
1-78	Orejana Canyon							
1-101	Abert Rim		X					
1-117	Fish Creek Rim		X				X	
1-132	Guano Creek				[2]		X	
1-139	Spaulding		X					
1-146A	Hawk Mountain			X		X		
1-146B	Sage Hen Hills							
2-14	Malheur R.-Bluebucket Cr.							
2-23L	Stonehouse		X					
2-23M	Lower Stonehouse							
2-72C	Sheepshead Mountains		X				X	
2-72D	Wildcat Canyon							
2-72F	Heath Lake							
2-72I	Table Mountain						X	
2-72J	West Peak						X	
2-73A	East Alvord				[3]	X		
2-73H	Winter Range							
2-74	Alvord Desert				[4]	X	X	
2-77	Mahogany Ridge						X	
2-78	Red Mountain							
2-81	Pueblo Mountains		X		[5]	X	X	
2-82	Rincon		X					
2-83	Alvord Peak						X	
2-84	Basque Hills						X	
2-85F	High Steens		X		[7]	X	X	
2-85G	S. Fk. Donner und Blitzen R.							
2-85H	Home Creek		X		[9]			
2-86E	Blitzen River							
2-86F	Little Blitzen Gorge		X		[7]	X	X	
2-87	Bridge Creek							
2-98A	Pine Creek							
2-98C	Sheep Gulch							
2-98D	Indian Creek							
2-103	Aldrich Mountain							
3-18	Castle Rock				[6]	X		
3-27	Beaver Dam Creek							[14]
3-31	Camp Creek			X				
3-32	Cottonwood Creek			X				
3-33	Gold Creek			X				
3-35	Sperry Creek			X				
3-47	Cedar Mountain							
3-53	Dry Creek						X	
3-56	Dry Creek Buttes				[5]		X	[12]
3-59	Owyhee Breaks			X	[5]		X	
3-73	Blue Canyon				[5]			
3-74	Upper Leslie Gulch			X			X	
3-75	Slocum Creek			X			X	[13]
3-77A	Honeycombs			X		X	X	
3-77B	Wild Horse Basin							
3-110	Lower Owyhee Canyon			X		X		
3-111	Saddle Butte	X			[8]	X		
3-114	Palomino Hills						X	
3-118	Bowden Hills					X		
3-120	Clarks Butte	X			[8]			
3-128	Jordan Craters	X			[8]	X	X	[15]
3-152	Willow Creek		X		[6]	X		
3-153	Disaster Peak		X		[6]	X		
3-156	Fifteenmile Creek		X		[6]	X	X	
3-157	Oregon Canyon		X		[6]	X	X	
3-162	Twelvemile Creek		X		[6]	X		
3-173	Upper West Little Owyhee			X				[16]
3-194	Lookout Butte							
5-1	Thirtymile				[10]		X	[12]
5-6	Lower John Day				[10]		X	[12]
5-8	North Pole Ridge				[10]			
5-9	Spring Basin						X	
5-21	Badlands				[11]			

Animals								
Northern Bald Eagle	Existing or Potential Bighorn Sheep Habitat	Crucial Deer Winter Range	Sage Grouse Strutting Grounds	Raptor Concentration and/or Excellent Raptor Habitat	Kit Fox	Other Animals	Cultural Resources	Paleon-tological Features
X		X						
		X						
		X						
							X	X
	X			X		19	X	X
	X			X		28		X
	X	X					X	
	X	X		X			X	
						28,36		X
				X		19,28	X	
							X	
						28		
						22,28		
		X				28		
		X						
	X				X			
	X				X			
					X			
	X				X			
					X			
					X			
					X			
					X	18	X	
		X				28		
		X				19		
	X	X				19,20,35,28		
	X	X		X	X	19,28	X	
		X				28		
				X	X			
	X	X	X	X		20,21,22,28		
			X			22		
	X		X	X		22		
		X	X	X		22		
				X		21,22,28	X	
		X		X		22,28	X	
						30		
	X							
						30		
	X	X				27		
						28		
						28		
				X		22,28		
				X		22,28	X	X
		X				19,22,28		
		X				19,28		
						23		
						22		
X	X							X
X							X	
X								
						23		
X	X					23		
X	X	X						
X	X							
X	X			X			X	
					X	24		
					X			
					X	19	X	
						24,28	X	
X						24,31		
						17,20,28	X	
						17,28,32	X	
						17,20,28	X	
	X					17,28	X	
						17,20,28	X	
						28	X	
						28		
						25	X	
						25	X	
						25	X	
							X	
		X					X	

Table 3-2. Special Wilderness Features in WSAs (continued)

		Geologic Features				Plants		
WSA No. (OR-)	WSA Name	Lava Fields and Related Features	High Fault-Block Scarps	Unusual Erosional Forms	Other Geologic Features	Uncommon Plant Communities or Diverse Plant Assemblages	Plants of Special Interest	Other Botanical Features
5-31	North Fork				10		X	
5-33	South Fork				10			
5-34	Sand Hollow							
5-35	Gerry Mountain							
5-42	Hampton Butte							
5-43	Cougar Well						X	
6-1	McGraw Creek					X		
6-2	Homestead					X	X	
6-3	Sheep Mountain					X	X	
11-1	Mountain Lakes							
11-17	Soda Mountain					X	X	
12-8	North Sisters Rocks						X	
12-14	Zwagg Island						X	

Other Geologic Features

[1] Largest inland system of moving sand dunes in Oregon
[2] Sink lakes
[3] Hot spring
[4] Alvord Desert playa
[5] Interesting or unusual geologic formations
[6] Volcanic landforms
[7] Glacial landforms
[8] Extensive lava tubes (caves)
[9] Ancient shoreline
[10] Basalt river canyon
[11] Prehistoric river channel

Other Botanical Features

[12] Relatively undisturbed communities of native bunchgrass
[13] Isolated stands of ponderosa pine in desert
[14] Ecotone between sagebrush steppe and forest
[15] Kipukas, or areas of undisturbed native vegetation in lava fields
[16] Pristine riparian communities

Other Animals

[17] Cougar and bobcat, predators with restricted ranges in the desert
[18] Snowy plover, federal candidate for listing as a threatened or endangered species
[19] Crucial antelope winter range
[20] Whitehorse cutthroat trout, federal candidate for listing as a threatened or endangered species
[21] Only populations of northern water shrew in eastern Oregon and pika in southeastern Oregon
[22] Redband trout, federal candidate for listing as a threatened or endangered species
[23] Rocky mountain elk in desert
[24] Townsend's big-ear bat, federal candidate for listing as a threatened or endangered species
[25] Steelhead trout and chinook salmon
[26] Cougar, bobcat and bear in the Siskiyou mountains
[27] Crucial elk winter range
[28] Habitat for sage grouse, federal candidate for listing as a threatened or endangered species
[29] Antelope fawning grounds
[30] Steelhead trout spawning habitat
[31] Long-billed curlew, federal candidate for listing as a threatened or endangered species
[32] Lahontan cutthroat trout, federally listed as a threatened species in Nevada
[33] Ferruginous and Swainson's hawks, federal candidates for listing as threatened or endangered species
[34] Habitat for spotted owl, state listed as a threatened species and proposed for federal listing as threatened
[35] Alvord chub, federal candidate for listing as a threatened or endangered species
[36] Sheldon tui chub, federal candidate for listing as a threatened or endangered species

X= Special feature is found in WSA

Animals								
Northern Bald Eagle	Existing or Potential Bighorn Sheep Habitat	Crucial Deer Winter Range	Sage Grouse Strutting Grounds	Raptor Concentration and/or Excellent Raptor Habitat	Kit Fox	Other Animals	Cultural Resources	Paleon- tological Features
						28,29,33		
						28,33		
						28	X	
						19,28		
X							X	
X							X	
X							X	
		X				26,34		

Table 3-3. Existing and Potential Wilderness (Nationwide) Representing Bailey-Kuchler Ecosystems Found in Oregon WSAs

	Existing Wilderness		Administratively[1] Endorsed Wilderness		Other Study Areas[1, 2]	
Bailey-Kuchler Ecosystems Represented in BLM WSAs in Oregon	Number of Areas	Acres	Number of Areas	Acres	Number of Areas	Acres
(Province Potential Natural Vegetation)						
Intermountain Sagebrush						
Sagebrush Steppe	3	76,699	3	357,400	135	4,316,853
Saltbush-Greasewood	3	45,553	2	30,740	44	1,175,920
Alpine Meadows and Barren	0	0	1	8,900	7	72,895
Rocky Mountain Forest						
Grand Fir-Douglas Fir Forest	10	909,780	3	129,669	9	185,701
Wheatgrass-Bluegrass	1	1,038	0	0	4	16,173
Western Ponderosa Forest	5	141,915	4	76,629	7	74,424
Sagebrush Steppe	4	76,129	4	213,772	24	280,791
Palouse Grassland						
Sagebrush Steppe	0	0	0	0	4	32,476
Wheatgrass-Bluegrass	2	55,925	0	0	6	21,143
Sierran Forest						
Mixed Conifer Forest	26	1,772,907	18	516,566	82	840,531
Chaparral	8	68,312	4	28,272	20	153,758
Pacific Forest						
Cedar-Hemlock-Douglas Fir Forest	13	293,965	6	257,275	13	155,367
Spruce-Cedar-Hemlock Forest	6	25,257	1	215,295	2	8
Fir-Hemlock Forest	24	1,103,850	3	252,400	1	334

[1] As of September 1, 1984.
[2] Includes lands under study by BLM and other agencies.

In applying this criterion, a day's drive is defined as 5 hours' driving time. For this EIS, a standard radius of 200 miles was used to approximate a 5-hour drive, allowing for variations in terrain, directness of routes, and road types and conditions over the entire EIS area.

Population centers are defined as standard metropolitan statistical areas (SMSAs) which have populations of 100,000 or greater. An SMSA is defined by the U.S. Bureau of the Census as a county containing at least one city of 50,000 inhabitants or more plus as many adjacent counties that are metropolitan in character and are socially integrated with that central city or cities. Table 3-4 lists the population centers within a day's drive of the study areas and other existing and potential wilderness within a day's driving time of those cities.

Distribution of Wilderness Areas

The geographic distribution of existing and potential wilderness is another criterion used to decide whether to recommend an area for wilderness.

Table 3-4. Population Centers Within Five Hours' Drive of Oregon WSAs and Existing and Potential Wilderness Areas [1,2]

	Existing Wilderness		Administratively Endorsed Wilderness[3]		Other Study Areas[4]	
Population Centers Within Five Hours' Drive of BLM Wilderness Study Areas	Number of Areas	Acres	Number of Areas	Acres	Number of Areas	Acres
Oregon						
Eugene-Springfield	40	1,766,470	9	549,441	48	994,303
Medford	32	1,679,364	34	1,037,581	125	2,762,623
Portland	45	2,809,254	3	1,191,579	21	315,629
Salem	43	1,795,240	3	1,191,579	23	433,952
Washington						
Kennewick-Richland-Pasco	42	4,088,569	9	1,056,203	37	427,299
Tacoma-Everett-Seattle	32	2,572,029	3	1,606,299	5	52,167
Yakima	45	3,719,309	3	1,606,299	18	207,413
Idaho						
Boise	16	4,741,570	18	1,225,239	141	5,347,290
Nevada						
Reno	14	1,247,084	43	1,650,871	190	5,675,627
California						
Redding	23	1,190,667	35	1,018,461	143	3,423,087

[1] Population centers are Standard Metropolitan Statistical Areas (SMSAs) with population over 100,000. (Data as of September 1, 1984)

[2] A standard radius of 200 miles was used to approximate a 5-hour drive.

[3] Includes National Forest lands in Idaho and California and lands in National Parks and National Wildlife Refuges and Ranges in Oregon and adjacent states.

[4] Includes BLM WSAs and Forest Service further planning areas in Oregon; a BLM WSA in Washington; BLM WSAs and Forest Service RARE II areas in Idaho, Nevada, and California; and lands owned by the State of California.

Many of the study areas are located in regions with little designated wilderness. Table 3-5 lists the number and acreage of existing and potential wilderness within 100 miles of each WSA.

Energy and Mineral Development

General Geology

The 85 wilderness study areas in Oregon are located in eight physiographic provinces as identified in the Oregon Natural Heritage Plan: the Ochoco, Blue and Wallowa Mountains; High Lava Plains and Columbia Basin; Owyhee Uplands; Basin and Range; Eastern Slopes, Oregon Cascades; Siskiyou Mountains; Western Slopes and Crest; and Western Oregon Interior Valleys. In addition, there are two small rocky islands that are WSAs off the Oregon coast in Curry County.

The Ochoco, Blue and Wallowa Mountains Province is located in the northeast corner of the state and is a region of variable relief including individual mountain ranges separated by faulted valleys and synclinal basins. Rocks found in this area include metamorphosed sediments and volcanics in the core of many of the mountain ranges, flanked by younger volcanic flows and tuffs. Three WSAs (McGraw Creek, OR-6-1, Homestead, OR-6-2, and Sheep Mountain, OR-6-3) overlook Hells Canyon of the Snake River. Bedrock in this particular area is made up of basalt, andesite, some limestone and argillite.

Table 3-5. Existing and Potential Wilderness Within 100 Miles of Oregon WSAs[1]

		Existing Wilderness		Administratively Endorsed Wilderness[2]		Other Study Areas[3]	
WSA No. (OR-)	WSA Name	Number of Areas	Acres	Number of Areas	Acres	Number of Areas	Acres
1-2	Devils Garden Lava Bed	15	829,472	3	167,900	17	379,127
1-3	Squaw Ridge Lava Bed	15	829,472	3	167,900	17	379,127
1-22	Four Craters Lava Bed	15	829,472	3	167,900	17	379,127
1-24	Sand Dunes	15	829,472	3	167,900	17	379,127
1-58	Diablo Mountain	10	701,439	6	510,170	25	910,540
1-78	Orejana Canyon	3	105,162	3	387,000	58	2,175,897
1-101	Abert Rim	3	148,174	8	388,940	43	1,518,751
1-117	Fish Creek Rim	2	91,254	8	388,940	55	2,686,113
1-132	Guano Creek	2	91,254	8	388,940	55	2,686,113
1-139	Spaulding	2	91,254	8	388,940	58	2,914,443
1-146A	Hawk Mountain	2	91,254	8	388,940	62	3,136,366
1-146B	Sage Hen Hills	2	91,254	8	388,940	62	3,136,366
2-14	Malheur R.-Bluebucket Cr.	5	277,353	1	30,000	44	1,310,882
2-23L	Stonehouse	2	87,253	3	387,000	71	2,788,909
2-23M	Lower Stonehouse	2	87,253	3	387,000	71	2,788,909
2-27C	Sheepshead Mountains	2	87,253	3	387,000	73	2,723,314
2-72D	Wildcat Canyon	2	87,253	3	387,000	73	2,723,314
2-72F	Heath Lake	2	87,253	3	387,000	73	2,723,314
2-72I	Table Mountain	2	87,253	3	387,000	73	2,723,314
2-72J	West Peak	2	87,253	3	387,000	73	2,723,314
2-73A	East Alvord	0	0	3	387,000	79	2,914,286
2-73H	Winter Range	2	87,253	3	387,000	73	2,723,314
2-74	Alvord Desert	0	0	3	387,000	79	2,914,286
2-77	Mahogany Ridge	0	0	3	387,000	76	3,558,933
2-78	Red Mountain	0	0	3	387,000	76	3,558,933
2-81	Pueblo Mountains	1	22,809	8	388,940	66	3,239,198
2-82	Rincon	1	22,809	8	388,940	66	3,239,198
2-83	Alvord Peak	0	0	4	387,400	73	3,389,346
2-84	Basque Hills	2	91,249	8	388,940	58	2,981,170
2-85	High Steens	0	0	3	387,000	75	3,153,575
2-85G	S. Fk. Donner und Blitzen R.	1	22,809	3	387,000	72	3,275,585
2-85H	Home Creek	1	22,809	3	387,000	72	3,275,585
2-86E	Blitzen River	0	0	3	387,000	70	2,705,909
2-86F	Little Blitzen Gorge	0	0	3	387,000	75	3,153,575
2-87	Bridge Creek	0	0	3	387,000	70	2,705,909
2-98A	Pine Creek	8	607,468	1	30,000	32	662,786
2-98C	Sheep Gulch	8	607,468	1	30,000	32	662,786
2-98D	Indian Creek	8	607,468	1	30,000	32	662,786
2-103	Aldrich Mountain	6	244,753	1	30,000	24	337,024
3-18	Castle Rock	5	583,128	1	30,000	44	1,265,552
3-27	Beaver Dam Creek	5	583,128	1	30,000	44	1,265,552
3-31	Camp Creek	4	221,953	1	30,000	49	1,634,157
3-32	Cottonwood Creek	4	221,953	1	30,000	49	1,634,157
3-33	Gold Creek	4	221,953	1	30,000	49	1,634,157
3-35	Sperry Creek	4	221,953	1	30,000	49	1,634,157

Table 3-5. Existing and Potential Wilderness Within 100 Miles of Oregon WSAs[1] (continued)

		Existing Wilderness		Administratively Endorsed Wilderness[2]		Other Study Areas[3]	
WSA No. (OR-)	WSA Name	Number of Areas	Acres	Number of Areas	Acres	Number of Areas	Acres
3-47	Cedar Mountain	2	87,253	1	30,000	65	2,364,077
3-53	Dry Creek	2	87,253	1	30,000	50	1,815,145
3-56	Dry Creek Buttes	2	87,253	1	30,000	50	1,815,145
3-59	Owyhee Breaks	2	87,253	1	30,000	65	2,364,077
3-73	Blue Canyon	2	87,253	1	30,000	65	2,364,077
3-74	Upper Leslie Gulch	2	87,253	1	30,000	57	2,108,128
3-75	Slocum Creek	2	87,253	1	30,000	57	2,108,128
3-77A	Honeycombs	2	87,253	1	30,000	57	2,108,128
3-77B	Wild Horse Basin	2	87,253	1	30,000	57	2,108,128
3-110	Lower Owyhee Canyon	2	87,253	2	45,500	70	2,682,672
3-111	Saddle Butte	2	87,253	2	45,500	70	2,682,672
3-114	Palomino Hills	2	87,253	3	387,000	73	2,731,834
3-118	Bowden Hills	0	0	3	387,000	78	2,967,077
3-120	Clarks Butte	1	18,300	0	0	66	2,370,077
3-128	Jordan Craters	1	18,300	0	0	66	2,370,077
3-152	Willow Creek	0	0	3	387,000	77	3,581,213
3-153	Disaster Peak	0	0	3	387,000	77	3,581,213
3-156	Fifteenmile Creek	0	0	3	387,000	77	3,581,213
3-157	Oregon Canyon	0	0	3	387,000	77	3,581,213
3-162	Twelvemile Creek	0	0	3	387,000	77	3,581,213
3-173	Upper West Little Owyhee	0	0	0	0	72	3,358,951
3-194	Lookout Butte	1	64,830	1	341,500	73	3,019,329
5-1	Thirtymile	16	868,117	0	0	11	151,357
5-6	Lower John Day	16	868,117	0	0	11	151,357
5-8	North Pole Ridge	16	868,117	0	0	11	151,357
5-9	Spring Basin	15	852,839	0	0	15	238,810
5-21	Badlands	14	736,663	1	122,400	18	353,499
5-31	North Fork	9	687,679	1	30,000	22	415,667
5-33	South Fork	10	726,879	2	35,500	22	431,188
5-34	Sand Hollow	10	726,879	2	35,500	22	431,188
5-35	Gerry Mountain	10	726,879	2	35,500	22	431,188
5-42	Hampton Butte	5	466,880	2	45,500	23	486,844
5-43	Cougar Well	5	466,880	2	45,500	23	486,844
6-1	McGraw Creek	8	3,308,592	2	153,518	9	102,664
6-2	Homestead	8	3,308,592	2	153,518	9	102,664
6-3	Sheep Mountain	8	3,308,592	2	153,518	9	102,664
11-1	Mountain Lakes	11	822,197	9	274,290	28	740,543
11-17	Soda Mountain	11	731,009	18	594,241	43	702,753
12-8	North Sisters Rocks	3	423,609	5	394,631	16	279,824
12-14	Zwagg Island	5	423,609	10	415,421	29	550,134

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[1] For purposes of this Final EIS, this table has not been updated to reflect changes resulting from the California Wilderness Act of 1984 (all three columns of the table) or lands added to study areas by the decision in Sierra Club V Watt (third column) in Oregon, California, Nevada and Idaho.

[2] Includes lands in National Parks and National Wildlife Refuges and Ranges in Oregon, lands in a National Wildlife Refuge and Range in Nevada, and land in National Forests in California and Idaho.

[3] Includes BLM WSAs and Forest Service further planning areas in Oregon; BLM WSAs and Forest Service RARE II areas in California and Idaho; BLM WSAs in Nevada; and lands owned by the State of California.

The High Lava Plains and Columbia Basin Province is west, north and south of the Ochoco, Blue and Wallowa Mountains Province. The Columbia Basin portion is a large lava plateau incised by several rivers (including the John Day River) that form steep-walled canyons. There are sand dunes in places and basalt buttes rise above the alluvial plain near Hermiston. Thick sheets of basalt were deposited as molten lava, flow upon flow during the Eocene, Oligocene and Miocene epochs. Typical sections, as seen in the canyon walls, exhibit many flows, each commonly 25 to 100 feet thick, that extend laterally for miles. WSAs in this portion of the province are adjacent to the Lower John Day River in north-central Oregon.

The High Lava Plains portion of the province contains undeformed young lava flows dotted by cinder cones and lava buttes. There are very few outflowing streams here, and as a result, there are several dry lake basins that were once filled with water during the Pleistocene epoch. Volcanism that occurred since Pleistocene times created interesting features including tuff rings and explosion craters.

The Basin and Range Province is located south of the High Lava Plains. Basin and Range terrain is characterized by north-south trending fault-block mountains and basins of internal drainage. Some mountains are horsts (upraised fault blocks) with intervening grabens (fault block valleys) and others are tilted fault blocks. The bordering grabens contain Plio-Pleistocene lake beds.

East of the Basin and Range Province is the Owyhee Uplands Province. This is an area of broad uplift, as shown by the youthful topography in the main river canyons. Rocks typical of this area are volcanically derived and mid- to upper-Cenozoic in age. Minor amounts of Quaternary alluvium occur within the Owyhee River Canyon and main tributary streams. Major structural features are not evident, although the area is a portion of the overall broad, northwest-plunging basin in this part of Oregon.

Four WSAs addressed in this EIS are located in the southwestern quarter of Oregon, from the Cascades west to the Pacific Ocean. The Mountain Lakes WSA (OR-11-1) lies within the Eastern Slopes, Oregon Cascades Province. Exposed rocks in the vicinity are composed of Pliocene and Upper Miocene fine-grained basaltic andesites.

One WSA, Soda Mountain (OR-11-17), is located within the Siskiyou Mountains, Western Slope and Crest, and Western Oregon Interior Valleys Provinces near the Oregon-California border. Exposed rocks in the area consist of basaltic andesite flows interbedded with volcanic breccias and pyroclastics.

Two WSAs (North Sisters Rocks, OR-12-8 and Zwagg Island, OR-12-14) are small islands and rocks located along the southern coast of Oregon. The North Sisters Rocks consist of porphyritic meta-basalt, while Zwagg Island consists of marine basalt capped by meta-sandstone.

Classification of Mineral Potential

Table 3-6 indicates the estimated geologic favorability, or potential for occurrence, for energy and mineral resources in each WSA. Known and probable energy and mineral resources in the study areas are denoted class M and H ratings, whereas commodities with a low potential for occurrence are rated O and L. The rating system also relates the geologic favorability to the amount and quality of information and evidence available (level of certainty) used in making that determination.

A commodity rated HD, for example, has the highest potential for occurrence with very good evidence to support that finding. On the other hand, OD is the lowest rating, indicating the lowest potential for occurrence and very good evidence to support that low rating. Minerals with no rating in a WSA were not studied in that area.

Inferred geologic conditions were used to rate the mineral character of the WSAs. Data were gathered by literature search, field reconnaissance or both. Rock chip and stream sediment samples were collected and geochemical analysis performed in areas where there was little information on possible mineralization. There has been some scattered exploratory drilling, with the results in some cases showing the potential for oil and gas or geothermal resources.

Mineral studies of the WSAs were performed by BLM geologists, and private and state specialists under BLM contract, including TERRADATA; WGM, Inc.; Barringer, Inc.; and State of Oregon Department of Geology and Mineral Industries. In most cases a geologic resource area (GRA) was established, encompassing one or more WSAs, and mineral potential was studied and classified within the entire GRA. The U.S. Geologic Survey and the Bureau of Mines are jointly preparing mineral survey reports for WSAs preliminarily recommended as wilderness and information from these reports has been utilized as the reports become available.

Areas of Critical Mineral Potential (ACMPs)

Due to longstanding concerns on the part of the BLM and the public regarding the availability of public lands for mineral exploration and development, there was a call for nominations of Areas of Critical Mineral Potential (ACMP) in 1982. ACMPs are areas that were nominated by the public as having mineral potential that is important to the local, regional or national economy or that could become important in the future. They are used by BLM to reevaluate areas under existing or "de facto" withdrawals (from mineral location and leasing).

The ACMPs were nominated with regard to particular mineral commodities, although other minerals of less significance may be present. Of the nine ACMPs involved in this EIS, six were nominated with regard to oil and gas, and three were nominated for high potential occurrences of gold and mercury.

Eight WSAs are completely within ACMPs and the ninth is partially within an ACMP (see table 3-6, Remarks).

Strategic and Critical Minerals

Strategic and critical minerals are defined by law (Strategic and Critical Materials Stock Piling Revision Act of 1979) as materials needed to supply the military, industrial and essential civilian needs of the United States during a national defense emergency and are not found or produced in this country in sufficient quantities to meet such needs.

Strategic and critical minerals determined to have a moderate to high potential for occurrence in WSAs in Oregon include copper, lead and zinc, which are used in large quantities and have a pervasive influence on the economy and national well-being. Manganese is on the stockpile list due to its special properties not readily found in other materials. Tin and chromium are listed because they are not produced in the United States in sufficient quantities, and the Nation relies on imports to supply nearly all domestic needs. Other strategic and critical minerals with moderate to high potential for occurrence in the WSAs include asbestos, beryllium, mercury, silver and fluorite.

Mineral Exploration in Oregon

A 6-year trend of growth in reported mineral exploration expenditures in Oregon reversed in 1982 (see table 3-7). Private companies spent an estimated $9.5 million in 1982 compared to an estimated $11.2 million in 1981 in search of new ore deposits. Metallic mineral exploration was concentrated in Baker and Grant Counties in the Blue Mountains of northeastern Oregon, in the Klamath Mountains in southwest Oregon, and in the volcanic areas of Harney, southern Lake and northern Malheur Counties. The principal target of exploration efforts in 1982 was gold, with lesser emphasis on base metals.

The greatest exploration expenditures in Oregon were made in the search for petroleum and natural gas. Here too, the expenditure declined to $23.0 million in 1982 compared to $31.2 million in 1981. The majority of exploration money was spent in northwest Oregon near the Mist gas field.

Geothermal energy exploration in 1982 was $2.3 million compared to $5.11 million in 1981. Lately, most geothermal interest in Oregon has shifted from the Basin and Range province in the east to the Cascade Range.

Present mineral production activity in the Oregon WSAs is minimal.

Watershed

Within or adjacent to a number of the WSAs are portions of eight river systems. They are the Donner und Blitzen, Deschutes, Crooked, John Day, Malheur, Owyhee, Kings and Snake Rivers. These eight rivers plus numerous tributaries drain the majority of the approximately 3,600 square miles within the WSAs. A total of approximately 540 miles of perennial streams flow through the WSAs.

Most of the WSAs have low to moderate rainfall, ranging from 5 inches annually east of the Steens Mountains to 30 inches at higher elevations. Most of the precipitation falls between November and May, often in the form of snow. The streams and rivers have highly fluctuating flows during the late winter and spring. As an example, the Owyhee River at Rome, Oregon can have flows varying between 1,000 and 30,000 cubic feet per second (cfs) during the winter and spring. By mid to late summer, river flows can drop to 100 to 200 cfs. By late summer, many of the tributary streams will develop pools and retain very low subsurface flows or dry up completely.

According to the Oregon Department of Environmental Quality (ODEQ 1976), instream water quality is generally good, except during the summer when low dissolved oxygen levels and high water temperatures, pH and fecal coliform bacteria counts occur.

Table 3-6. Mineral Potential Classification in the WSAs

WSA#	WSA Name	Bentonite	Beryllium¹	Cinders	Copper¹	Diatomite	Gold	Limestone	Lithium	Mercury¹	Molybdenum	Optical Calcite	Perlite	Potassium	Sodium	Silver¹
1-2	Devils Garden Lava Bed	OB		HD		LB	LB	OC		LB			LB²			LB
1-3	Squaw Ridge Lava Bed	OB		HD		LB	LB	OC		LB						LB
1-22	Four Craters Lava Bed	OB		HD²		LB	LB	OC		LB						LB
1-24	Sand Dunes	OB			LB	MB²	LB	LB		LB				LB²	LB²	LB
1-58	Diablo Mountain	LC				MB²	LB	HD²	MB²	LB				MB²	MB²	
1-78	Orejana Canyon	OA				MB²	LB²	OA					LB			LB²
1-101	Abert Rim	LB				LB²	LB	OC		LB						LB
1-117	Fish Creek Rim	OA				LC²	LC	OC		LC						LC
1-132	Guano Creek	OA				LC²	LC	OC		LC						LC
1-139	Spaulding	MB				MB²	MC	OC		MC						MC
1-146A	Hawk Mountain	MB²			MA²	MB²	MB²	OA		MA²						MB²
1-146B	Sage Hen Hills	LB²			MB²	MB²	MB²	OA		MB²						MB²
2-14	Malheur River-Bluebucket Cr.	LA				MA		OC								
2-23L	Stonehouse	LA				MA²		OB		LB					LA	
2-23M	Lower Stonehouse	LA				MA²		OB		LB					LA	
2-72C	Sheepshead Mtns.	LA			MB²	MB²	MB²	LA		MB²					LA	MB²
2-72D	Wildcat Canyon	LA			MB²	MB²	MB²	LA		MB²					LA	MB²
2-72F	Heath Lake	LA			MB²	MB²	MB²	OB		MB²					LA	MB²
2-72I	Table Mountain	LA			MB²	MB²	MB²	LA		MB²					LA	MB²
2-72J	West Peak	LA			MB²	MB²	MB²	LA		MB²					LA	MB²
2-73A	East Alvord	LC				MB²		OC								
2-73H	Winter Range	LA			LB	LA²	LB	OB		LB					LA	
2-74	Alvord Desert	LC	MB²		MB²	MB²		OC						LB²	LB²	MB²
2-77	Mahogany Ridge	LB			MB	MC²		OC		MB						
2-78	Red Mountain	LB				MC²		OC		MB						
2-81	Pueblo Mountains	LB			HD²	LB	HD²	LC		HD²	HD²				LA	HD²
2-82	Rincon	LA			MB²	MA²	MB²	OA		MB²						
2-83	Alvord Peak	LA			HD	LA	HD	OC		HD						
2-84	Basque Hills	LA			MA	MA	MA	OA		MA						
2-85F	High Steens	MB²			HD	OC	HD	OD		HD	HD		HD²		LA	HD
2-85G	S.Fk.Donner & Blitzen R.	OA				MC²		OC								
2-85H	Home Creek	OA				MC²		OC								
2-86E	Blitzen River	LA			HD²	LA	HD²	OC		HD²	HD²				LA	HD²
2-86F	Little Blitzen Gorge	OC			HD²	OC	HD²	OD		HD²	HD²				OB	HD²
2-87	Bridge Creek	OA				MC²		OC								
2-98A	Pine Creek	LC			MA	OC	MA	OB								MA
2-98C	Sheep Gulch	LC			HC	OC	MA	OB								HC
2-98D	Indian Creek	LC			MA	OC	MA	OB								MA
2-103	Aldrich Mountain	LC				OC		OB								
3-18	Castle Rock	LA				MC	HC	LC		HC						HC
3-27	Beaver Dam Creek	LA				LA	MB²	LC								
3-31	Camp Creek	LA					MB²	LB		LA		MC	MB			LA
3-32	Cottonwood Creek	LA					LA	LB		LA		MC	MB			LA
3-33	Gold Creek	LA					MB²	LB		LA		MC	MB			LA
3-35	Sperry Creek	MB					LB	LC		LB		HC	MC			LB
3-47	Cedar Mountain	LA				LC		LC								
3-53	Dry Creek	MC				MB	LC	LC		LC		HD	MC			LC
3-56	Dry Creek Buttes	MB				LB	HC	LC				MC				HC
3-59	Owyhee Breaks	MB					MC²	LB		MC²						MC²
3-73	Blue Canyon	MB				LB	MB²	LC								MB²
3-74	Upper Leslie Gulch	MB					MB	LC					MB			
3-75	Slocum Creek	MB					MB	LC					MB			
3-77A	Honeycombs	MB				LB	MC²	LC		LC		LC	MC			MC²
3-77B	Wild Horse Basin	LB				LB	LC	LC		LC		HC	MC			LC
3-110	Lower Owyhee Canyon	MB					MC²	LB		MC²	LB²					MC²
3-111	Saddle Butte	LB²				LB²	MB²	LC			MB²					
3-114	Palomino Hills	LA			LB	MB²	LB	LA		LB					LA	LB
3-118	Bowden Hills	LA				LB	MB²	LB		LB²						LB²
3-120	Clarks Butte	LB				LB	LB	LB								LB
3-128	Jordan Craters	LB				LB	LB	LB								LB
3-152	Willow Creek	LC	LB			LB	LC	LC	LA	MC						MC²
3-153	Disaster Peak	MC²	MC²			LB	HC²	LC	MC²	MC²						LC
3-156	Fifteenmile Creek	LC	LC			LB	LC	LC	LA	MC²						MC²
3-157	Oregon Canyon	LC				LB	MC²	LC	LA	MC²						
3-162	Twelvemile Creek	LC	LC			LB	MC	LC	LA	MC²						MC²
3-173	Upper W.Ltl. Owyhee	MB	LC				LB²	LB		LA						LB²
3-194	Lookout Butte		MB²											LB	LB	MB²

Slab Lava	Tin[1]	Zeolites	Zinc[1]	Coal	Geothermal	Oil & Gas	Tar Sand/Oil Shale	Uranium/Thorium	Remarks
HD[2]		LB[2]	LB	LB	MB	LA		OA	
HD[2]		OB		LB	MB	LA		OA	
HD[2]		OB		LB	MB	LA		OA	
		LB		LB	OA	MB		OA	
		LC		LB	HD[2]	MB		OA	Borates:MB[2]
	LB[2]	LB		LB	LB	LA		OA	Lead,Antimony:LB[2]
		OC		LB	MB[2]	LA		OA	
		LB		LB	HD[2]	LA		OA	
		LB		LB	LB	LA		OA	
		LB		LB	LB	LA		LB[2]	Pozzolanic Tuffs:HD[2]
		LB[2]		LC	MB[2]	LB		OA	
		LB[2]		LB	LB	LB		OA	
		LC		LB	OB	MB	OC	OA	Metallic Min.:OA
		LA		LC	OB	LB	OC	OA	
		LA		LC	OB	LB	OC	OA	
		MB[2]		LC	OB	MB	LA	OB	
		LA		LC	MB[2]	MB	LA	OB	
		LA		LA	OB	MB	OB	LC	
		LA		LC	HD[2]	MB	OC	OA	
		LA		LC	HD[2]	MB	OC	OA	
		LC		LC	HD[2]	MB	OC		Sand & Gravel:HD
		LA		LC	HD[2]	MB	OC	OA	
		LC	MB[2]	LC	HD[2]	MB	OC	MC[2]	Sand & Gravel:HD
		LA		OC	MC[2]	LA	OC	LB	
		LA		OC	LB[2]	LA	OC	LB	
		LB[2]	HB[2]	LD	MB[2]	OB	LD	HB[2]/LB	Partially in ACMP
		OA		LC	LB	LB	OC	OA	
		LA		OC	HD[2]	LA	OC	LB	
		OA		LC	LB[2]	LB	OC	OA	
		MB[2]		OD	HD[2]	LB	OD	LB	
		OA		OB	OD	LA	OC	OA	Metallic Min.:OB
		OA		OB	OD	LA	OC	OA	Metallic Min.:OB
		LA		OD	LB	LB	OD	OC	
		OB		OD	LB	LB	OD	LC	
		OA		OB	LB	LA	OC	OA	Metallic Min.:OB
		OB		OB	MB	LB	LA	LB	Chromium:HD
		OB		OB	LB	LB	LA	LB	Chromium:LB
		OB		OB	MB	LB	LA	LB	Chromium:HD
		OB		LB	OC	LB	LA	OA	Asbestos,Chromium:MB
		LC		LB	MC[2]	MB	LC	LA	
		LC		LB	LB	MB	LC	LA	
		LC		LC	LB	MB	LC	LB	
		LC		LC	LB	MB	LC	LB	
		LC		LC	LB	MB	LC	LB	
		LB		LB	LB	MB	LC	LB	
		LA		LB	LB	MB	LB	LA	Metallic Min.:LB
		MB		LB	LB	MB	LB	LB	Semiprecious Gems:HD
		MC		LB	LB	MB	LB	MB[2]	ACMP
	LB	MB		LB	MB	MB	LB	MB[2]	Semiprecious Gems:HD[2]
		MB		LB	MC	MB	LB	LA	Semiprecious Gems:HD
	MB	MB		LB	LB	MB	LB	LB	Pumice:MB
	MB	MB		LB	LB	MB	LB	LB	Pumice:MB
		LC		LB	LB	MB	LC	LB	Semiprecious Gems:HC
		LB		LB	HC	MB	LC	LB	
	LB[2]	MC[2]		LB	MC[2]	MB	LB	LB	Flourite:MB
		LB[2]		LC	LB	MB	LC	LB[2]	
		MB[2]		OB	LB	MB	OC	OA	
		LB		LB	MC[2]	MB	LB	LB	
		LB		LC	MB	MB	LB	LB	
		LB		LC	MB	MB	LB	LB	
	LB	LA		LC	MB	LB	LC	LC	Metallic Minerals:MC[2]
	LB	MC[2]		LC	MB	LB	LC	MC[2]	ACMP
	LB	LA		LC	MB	LB	LC	MC[2]	Metallic Minerals:MC[2]
	LB	LA		LC	MB	LB	LC	MC[2]	
	LB	LA		LC	MB	LB	LC	MC[2]	Metallic Minerals:MC
		MB		LB	MB	MB	LB	LB	Lead:LC, Manganese:LA
				LB	MB	MB		MB[2]	Aggregate:HC

Table 3-6. Mineral Potential Classification in the WSAs

WSA#	WSA Name	Bentonite	Beryllium[1]	Cinders	Copper[1]	Diatomite	Gold	Limestone	Lithium	Mercury[1]	Molybdenum	Optical Calcite	Perlite	Potassium	Sodium	Silver[1]
5-1	Thirtymile	OB				OB	MC[2]	OB	MC[2]	MC[2]				OB	OB	
5-6	Lower John Day	OB				OB	LC	OB	LC	LC				OB	OB	
5-8	North Pole Ridge	OB				OB	MC	OB						OB	OB	MC
5-9	Spring Basin	LC				LC		LC	MC[2]	MC[2]	MC[2]			LB	LB	
5-21	Badlands	LB				LB		LB						LB	LB	
5-31	North Fork	MC[2]				LC		LC						LB	LB	
5-33	South Fork	LC				LC		LC						LB	LB	
5-34	Sand Hollow	HC[2]				LC		LC						LB	LB	
5-35	Gerry Mountain	HD[2]	LB			LC		LC						LB	LB	
5-42	Hampton Butte	LC				LC		LC						LB	LB	
5-43	Cougar Well	LC				LC		LC						LB	LB	
6-1	McGraw Creek	LC			HD		HD	LC								HD
6-2	Homestead	LC			MC		MC	LC								MC
6-3	Sheep Mountain	LB			MB	LB	MB	LB								MB
11-1	Mountain Lakes															
11-17	Soda Mountain	OA			MB[2]	OA	MB[2]	OA		MB[2]	MB[2]			OA	OA	MB[2]
12-8	N. Sisters Rocks															
12-14	Zwagg Island															

Legend:

Level of Potential
O: Lacks Potential
L: Low Potential
M: Moderate Potential
H: High Potential
ND: Potential not Determined

Level of Certainty
A: Insufficient Data or No Direct Evidence
B: Indirect Evidence Available
C: Direct Evidence but Quantitatively Minimal
D: Abundant Direct and Indirect Evidence

[1] Strategic and Critical Minerals
[2] Classifications are the highest rating in part of the WSA. All ghest rating in part of the WSA. All others apply to the entire acreage within the WSA
ACMP = Area of Critical Mineral Potential

These problems are primarily due to cattle grazing and solar heating on diminishing flows and unshaded streams.

The water quality in the Malheur and Owyhee River Basins in Malheur County was below acceptable standards established under the Oregon Administrative Rules, Chapter 340. A more recent water sampling program (Malheur County 1980) verified that water quality was poor in the sections of the Lower Malheur and Owyhee Rivers that drain irrigated row cropland, but was generally in good condition in the upper reaches of streams flowing through public lands which include several WSAs.

Sediment yields are generally low (0.1 to 0.2 acre-feet per square mile per year). Stream bank erosion is probably the major contributor to sediment in streams.

Ground water quality is generally good throughout the areas; dissolved solids are usually less than 1,000 milligrams per liter. Excessive sodium, boron and arsenic cause problems in some places (Pacific Northwest River Basins Commission 1970).

Wildlife

Animal distribution, diversity and abundance are dependent on various factors; of primary importance are food, cover and water distribution. Due to their scarcity, water and vegetation associated with water are very important to wildlife in semi-arid eastern Oregon. Riparian areas with trees, shrubs and herbaceous species provide the greatest habitat diversity and provide nutritious green forage late in

Slab Lava	Tin[1]	Zeolites	Zinc[1]	Coal	Geothermal	Oil & Gas	Tar Sand/Oil Shale	Uranium/Thorium	Remarks
		OB	MC[2]	OB	OC	MC	OB	LB	Sand & Gravel:OC, Rock Aggregate:LC
		OB	LC	OB	OC	MC	OB	OA	Sand & Gravel:OC, Rock Aggragate:LC
		OB		OB	OC	MC	OB	OB	Sand & Gravel:OC, Rock Aggregate:LC
		LC	MC[2]	OB	OC	MC	OB	OB	Sand & Gravel, Rock Aggregate:LC Semiprecious Gems:MC[2]
		LB		OB	LC	LC	OB	OC	Sand & Gravel:MC[2],Rock Aggregate:LC Metallic Min.:LB
		MB[2]		OB	OC	HC	OB	OB	Sand & Gravel, Rock Aggregate:LC Metallic Min.:LB, ACMP
		LC		OB	OC	HC	OB	LB	Semiprecious Gems:HD[2],Min.Mat.:LC Metallic Min.:LB, ACMP
		MC[2]		OB	OC	HC	OB	LB	Semiprecious Gems:LB, Min.Mat.:LC ACMP
		MC[2]	LB	OB	OC	HC	OB	OB	Tungsten:LB, Min.Mat.:LC, ACMP
		LC		OB	OC	HC	OB	OB	Mineral Materials:LC, ACMP
		LC		OB	OC	HC	OB	OB	Mineral Materials:LC, Metallic Min.:LB ACMP
		LC		LC	LB	LC	LC	LC	
		LC		LC	LB	LC	LC	LC	
		LB		LC	LB	LC	LC	LC	
					MB	LC			Mineral Materials:MC, Metallic Min.:OB, Industrial Min.:OD
		OA		LB	LA	MA	LB	LB	Lead:MB, Aggregates:MC
									No Mineral Potential
									No Mineral Potential

the summer when upland vegetation has dried. The greatest wildlife species concentration and diversity occur in riparian areas.

Each wildlife species exhibits a different degree of adaptability in the number of plant communities and successional stages it can use for feeding and reproduction (Thomas *et al.* 1979). The sensitivity of each species to change is directly related to its adaptability, with the most adaptable species being the least sensitive to change. Examples of adaptable species include the coyote, common raven, bushy-tailed woodrat, bobcat, American robin, great horned owl, northern flicker and red-tailed hawk. Examples of species with a low adaptability include birds such as sage grouse, sage sparrow and pinyon jay, and fish, such as several species of chub.

Big Game Species

Oregon supports a variety of economically important big game species. Mule deer and antelope are widespread throughout much of eastern Oregon. Rocky Mountain elk are found in 15 WSAs, favoring locations of rugged topography where timber stands are interspersed with meadows and grassland openings.

Bighorn sheep have been reintroduced into several of the WSAs, and further reintroductions by the Oregon Department of Fish and Wildlife (ODFW) are projected in 11 other WSAs. These study areas generally have steep rugged topography, high meadows, fault blocks, breaks and isolated canyonlands. Although black bear are found in both eastern and western

Table 3-7. Private Sector Mineral Exploration Expenditures in Oregon (millions of dollars)[1]

Year	Metals	Oil & Gas	Geothermal
1982	$9.50	$23.00	$2.30
1981	11.20	31.20	5.11
1980	5.62	25.80	2.79
1979	4.04	10.70	1.93
1978	4.44	4.60	1.30
1977	3.60	2.00	0.60
1976	2.30	2.00	1.40

[1] From "The Oregon Geology" published by the State of Oregon, Department of Geology and Mineral Industries.

Oregon, they are only found in a few WSAs. Mountain Lakes WSA (OR-11-1) and Soda Mountain WSA (OR-11-17) in southwest Oregon provide habitat for Roosevelt elk and black-tailed deer.

Deer, elk, antelope and bighorn sheep concentrate on winter ranges when snow forces them out of higher elevations. Food and cover provided by winter habitat are especially important because animal fat reserves decrease during the winter. Winter ranges are the first areas to have green grasses and forbs in the spring and are needed by wildlife to improve their weakened condition at that time of year. Winter ranges for deer are located in 40 WSAs, for elk in 7 WSAs, for antelope in 21 WSAs and for bighorn sheep in 6 WSAs.

Upland Game Birds

Chukar, the most common game bird, concentrate in steep rocky areas adjacent to streams and water developments and are abundant along the talus slopes and numerous canyons of eastern Oregon. California quail are closely associated with brushy riparian areas at elevations below 6,000 feet throughout Oregon. Mourning doves are spring-through-fall breeding residents with most nesting occurring in juniper trees. Mourning doves begin migrating south to winter areas after the first autumn rains.

Raptors

Many WSAs contain numerous breaks, fault blocks, rims and rugged canyons which provide excellent nesting sites for raptors. These vertical rock walls are very important as secure places for a variety of raptors to nest and rear their young. Prairie falcons, for example, use high cliffs because the cliffs have predictable thermals and their height provides security from ground-dwelling predators. Other raptors commonly nesting in the WSAs include golden eagles, American kestrel, red-tailed hawk, great horned owl, sharp-shinned hawk, turkey vulture and Swainson's hawk.

Other Mammals, Birds, Reptiles and Amphibians

Approximately 350 nongame species (amphibians, reptiles, birds and mammals) inhabit the WSAs, including black-tailed jackrabbit, sage sparrow, beaver, ravens, western rattlesnake and tree frog. Some species such as beaver are found in specific habitats; others such as deer mice occur throughout the WSAs.

North Sisters Rocks (WSA OR-12-8) and Zwagg Island (WSA OR-12-14) receive only minimal use by marine mammals and by pelagic (sea) birds.

Fish

Native fish in the WSAs include rainbow, redband and cutthroat trout, minnows such as dace and redside shiners, chubs, bridgelip suckers, mountain whitefish, and sculpins. Steelhead trout and chinook salmon migrate and spawn in the John Day River, which traverses the Thirtymile (OR-5-1), Lower John Day (OR-5-6), North Pole Ridge (OR-5-8), and Spring Basin (OR-5-9) WSAs. Steelhead also spawn in some creeks tributary to the John Day River, including Pine Creek and Indian Creek, located in WSAs OR-2-98A and OR-2-98D, respectively. Rainbow trout are native in Camp and Dutch Oven Creeks in the Soda Mountain WSA (OR-11-17).

Some fish are relicts of once widespread species which evolved in isolation into new species and subspecies having a limited range. Because of limited range and declining habitat, the American Fisheries Society has recognized several fish species as being of "special concern" (Deacon *et al.* 1979), four of which are found in Oregon WSAs: redband trout, Whitehorse cutthroat trout, Alvord chub and the Catlow Tui chub.

Redband trout are native to southeastern Oregon. As a result of the introduction of rainbow trout, the redband trout populations have been greatly reduced through hybridization. The redband population in

Threemile Creek and Home Creek (Home Creek WSA, OR-2-85H), one of the few remaining pure strains, has been used by ODFW as a source of brood stock for hatchery rearing (Wilmont 1974).

Whitehorse cutthroat trout has been introduced from Whitehorse Creek (in Fifteenmile Creek WSA, OR-3-156) to Van Horn and Denio Creek (in Pueblo Mountains WSA, OR-2-81), Mosquito Creek (in High Steens WSA, OR-2-85F), Antelope Creek (in Twelvemile Creek WSA, OR-3-162) and elsewhere. The Alvord chub is found in several springs and desert streams in Pueblo Valley (including Pueblo Mountains WSA). The Catlow Tui chub is restricted to several creeks in Catlow Valley (including Home Creek in Home Creek WSA, OR-2-85F).

Rainbow trout, Lahontan cutthroat trout, crappie and both smallmouth and largemouth bass are planted in suitable streams and reservoirs to maintain sport fisheries.

Threatened and Endangered Species

The American peregrine falcon is listed as endangered and the northern bald eagle is listed as threatened in Oregon under the Endangered Species Act of 1973. Although peregrine falcons migrate through Oregon, observations are rare and no active nests have been found in any of the WSAs. Wintering bald eagles are attracted to the areas by concentrations of migrating waterfowl and deer, especially from December through March. Bald eagles in the Snake, Owyhee, John Day and Crooked River canyons have utilized WSAs as winter roost sites. Wintering bald eagles have also been observed foraging in the Devils Garden (OR-1-2), Squaw Ridge (OR-1-3) and Four Craters Lava Beds (OR-1-22) WSAs.

The Western snowy plover and kit fox are classified as threatened by ODFW (ODFW 1975). The snowy plover, which is also a candidate for Federal listing, nests along the eastern edge of the Alvord playa in the Alvord Desert WSA (OR-2-74). The kit fox's northernmost range extends into the southeast corner of Oregon and potentially includes the Rincon (OR-2-82) and Basque Hills (OR-2-84) WSAs, as well as all WSAs east of the High Steens WSA (OR-2-85F) as far north as the Sheepshead Mountains WSA (OR-2-72C).

The sage grouse is a candidate species for Federal listing as threatened or endangered. Sage grouse are found in most of the WSAs where there is a mosaic of big and low sagebrush types. Strutting grounds and nesting areas are crucial habitat because grouse mate each year in these clearings in the sagebrush. Most nesting occurs within 2 miles of a strutting ground.

Sagebrush, besides being important as food, provides necessary escape and nesting cover. Upland meadows and meadows along streams are crucial habitat because they supply insects and succulent forbs to young birds (Savage 1969).

Ferruginous and Swainson's hawks, Federal candidates for listing as threatened or endangered, are found in the South Fork (OR-5-33) and Sand Hollow (OR-5-34) WSAs.

Other candidates for Federal listing that utilize the WSAs include the long-billed curlew, found in the Jordan Craters WSA (OR-3-128), Townsend's big-ear bat, also found in Jordan Craters, as well as the Saddle Butte (OR-3-111) and Clarks Butte (OR-3-120) WSAs, and California bighorn sheep, previously mentioned under Big Game Species.

Of the fish species mentioned previously, the Lahontan cutthroat trout, found in the Disaster Peak WSA (OR-3-153), which overlaps the Oregon-Nevada border, is Federally listed as threatened in Nevada. Whitehorse cutthroat trout, redband trout and Sheldon tui chub are candidates for Federal listing as threatened or endangered. Guano Creek, in the Guano Creek WSA (OR-1-132), is habitat for the Sheldon tui chub.

Livestock Grazing

The WSAs play an important role in providing livestock forage on the public lands. In the 85 WSAs combined, about 153,000 AUMs (animal unit months, the amount of forage needed to sustain one cow and a calf, or equivalent animals for one month) of forage are used by livestock each year. On BLM lands in Oregon as a whole, an average of l,000,000 AUMs of forage is used by livestock each year. Table 3-8 shows current estimated livestock use in AUMs for each WSA.

Most of the WSAs contain livestock improvements. These improvements include: 555 reservoirs and waterholes, 125 developed springs, 17 wells, 11 miles of pipeline, 3,220 miles of fence, 3 wild horse traps, and 23 corrals referred to as structural projects; and 9,200 acres of seeding, 2,680 acres of brush control and 3,160 acres of juniper cutting, referred to as vegetative manipulation projects. Livestock operators use existing ways to check livestock, distribute salt

Table 3-8. Current Estimated Livestock Use in WSAs

WSA No. (OR-)	WSA Name	Current Estimated Livestock Use (AUMs)
1-2	Devils Garden Lava Bed	914
1-3	Squaw Ridge Lava Bed	1,175
1-22	Four Craters Lava Bed	623
1-24	Sand Dunes	354
1-58	Diablo Moutain	588
1-78	Orejana Canyon	777
1-101	Abert Rim	708
1-117	Fish Creek Rim	778
1-132	Guano Creek	575
1-139	Spaulding	3,580
1-146A	Hawk Mountain	3,970
1-146B	Sage Hen Hills	485
2-14	Malheur R-Bluebucket Cr.	650
2-23L	Stonehouse	2,307
2-23M	Lower Stonehouse	530
2-72C	Sheepshead Mountain	2,226
2-72D	Wildcat Canyon	1,894
2-72F	Heath Lake	857
2-72I	Table Mountain	1,944
2-72J	West Peak	410
2-73A	East Alvord	808
2-73H	Winter Range	604
2-74	Alvord Desert	4,966
2-77	Mahogany Ridge	5,420
2-78	Red Mountain	1,109
2-81	Pueblo Mountain	4,430
2-82	Rincon	7,054
2-83	Alvord Peak	2,436
2-84	Basque Hills	6,576
2-85F	High Steens	4,908
2-85G	S. Fork Donner & Blitzen	4,960
2-85H	Home Creek	2,809
2-86E	Blitzen River	4,561
2-86F	Little Blitzen Gorge	1,248
2-87	Bridge Creek	1,246
2-98D	Indian Creek	5
2-103	Aldrich Mountain	231
3-18	Castle Rock	1,303
3-27	Beaver Dam Creek	2,782
3-31	Camp Creek	2,146
3-32	Cottonwood Creek	707
3-33	Gold Creek	1,964
3-35	Sperry Creek	849
3-47	Cedar Mountain	2,637
3-53	Dry Creek	2,939
3-56	Dry Creek Buttes	2,241
3-59	Owyhee Breaks	1,399
3-73	Blue Canyon	1,493
3-74	Upper Leslie Gulch	250
3-75	Slocum Creek	356
3-77A	Honeycombs	1,755
3-77B	Wild Horse Basin	1,513
3-110	Lower Owyhee Canyon	7,106
3-111	Saddle Butte	1,916
3-114	Palomino Hills	1,282
3-118	Bowden Hills	1,584
3-120	Clarks Butte	989
3-128	Jordon Craters	1,693
3-152	Willow Creek	3,896
3-153	Disaster Peak	6,268
3-156	Fifteenmile Creek	5,226
3-157	Oreon Canyon	2,601
3-162	Twelvemile Creek	2,082
3-173	Upper West Little Owyhee	3,266
3-194	Lookout Butte	2,626
5-1	Thirtymile	406
5-6	Lower John Day	804
5-8	North Pole Ridge	337
5-9	Spring Basin	89
5-21	Badlands	1,100
5-31	North Fork	535
5-33	South Fork	1,236
5-34	Sand Hollow	412
5-35	Gerry Mountain	1,565
5-42	Hampton Butte	775
5-43	Cougar Well	1,431
6-1	McGraw Creek	6
6-2	Homestead	660
6-3	Sheep Mountain	30
11-17	Soda Mountain	317
TOTAL		153,288

and to inspect or maintain range improvements. Ways are used for hauling water for livestock in at least three WSAs: Four Craters Lava Bed (OR-1-22), Sheepshead Mountains (OR-2-72C) and Badlands (OR-5-21).

The appendices discuss the number of grazing allotments, the forage allocations, and the period of livestock use for each of the WSAs.

Utility Corridor Routing and Communication Facility Siting

During scoping of the EIS, 20 wilderness study areas were initially identified as potentially conflicting (if designated wilderness) with the expansion of existing corridors or designation of potential new corridors. These conflicts were reviewed by the utility interests most likely to need new facilities in the vicinity of the WSAs, and as a result, the potential conflicts were redefined .

Map 7 shows the existing and proposed utility corridors in or near the wilderness study areas.

Four of the WSAs, Alvord Desert (OR-2-74), Basque Hills (OR-2-84), Saddle Butte (OR-3-111) and Bowden Hills (OR-3-118) represent significant obstacles to future corridors, according to Pacific Power & Light Company and the Bonneville Power Administration. Although numerous WSAs are bounded by existing powerlines or roads with parallel powerlines, the option is always available to construct new facilities within the designated corridor and parallel to the existing right-of-way but opposite the potential wilderness area. Locating future corridors to avoid other WSAs originally identified as potentially conflicting would add little or no additional length or cost to facilities constructed within the corridors.

Future corridor needs for high voltage electric transmission lines are somewhat speculative. Major variables include: uncertain growth of regional electric demand, variable projections of surplus hydroelectric generation from the Columbia River dams and other Northwest generating facilities, opportunities to upgrade carrying capacity of existing lines, parallel line installation within existing corridors, and potential new line locations entirely outside of Oregon.

With respect to communication facility sites, two such sites exist within the Fish Creek Rim (OR-1-117) and Sheep Mountain (OR-6-3) WSAs. No additional sites have been proposed on a regional or statewide basis and the Wilderness Management Policy allows for continued use and maintenance of the existing sites. Therefore, the issue of communication facility siting will not be discussed further in this statewide volume. Individual proposals or projections affecting specific WSAs are addressed in the site-specific appendices for those areas.

Wood Products Harvest

Commercial Timber Products

Nine WSAs contain a total of 5,719 acres of commercial forest land having a total standing timber volume of 77,609 Mbf (thousand board feet). The major commercial species are Douglas fir, ponderosa pine and true firs (e.g. white, grand).

Prior to the wilderness review process, all but one of these nine WSAs (Soda Mountain OR-11-17) had a partial harvest for salvage purposes. An estimated 3,534 acres are currently designated unavailable for harvest because of inaccessibility or to protect other values. In addition, 334 acres in Mountain Lakes WSA (OR-11-1) and 583 acres in Soda Mountain WSA (OR-11-17), which were recently reclassified as commercial forest lands under a Timber Production Capability Classification (TPCC) update, are currently unavailable for harvest. Consideration of the new TPCC in the upcoming planning cycle is expected to result in a portion of this acreage being added to the allowable cut base. The remaining 1,268 acres provide an estimated average annual timber yield of 145 Mbf. An additional average annual yield of 11 Mbf is harvested on a salvage basis from lands that are currently unavailable for BLM's annual programmed timber harvest.

Table 3-9 shows the amount of commercial forest land and potential and current yield for the nine WSAs.

Minor Forest Products

Although juniper is found in many of the WSAs, only in three is it considered suitable for production of firewood, posts and poles. An estimated 9,820 acres in Four Craters Lava Bed (OR-1-22), Fish Creek Rim (OR-1-117) and Badlands (OR-5-21) WSAs are accessible and close enough to population centers to be managed for this type of production. Production from these WSAs ranges between 2 to 3 cords per acre, and products are sold on a request basis.

Sale and removal of minor forest products occurred in the Badlands WSA prior to the wilderness review process.

Table 3-9. Commercial Forest Land (CFL) and Yield by WSA

WSA No. (OR-)	WSA Name	Total Area and Volume		Potential Annual Timber Yield (Mbf)	Current Available CFL Acres	Current Annual Timber Yield (Mbf)
		Acres	Mbf			
1-101	Abert Rim	600	3,000	47	0	0
2-14	Malheur River-Bluebucket Creek	42	165	3	22	2
2-98A	Pine Creek	118	158	8	0	0
2-98C	Sheep Gulch	323	636	23	98	7
2-98D	Indian Creek	50	150	4	0	0
2-103	Aldrich Mountain	1,153	13,000	81	1,082	76
5-31	North Fork	2,176	15,000	205	66[1]	71[1]
11-1	Mountain Lakes	334	7,500	94	0	0
11-17	Soda Mountain	923	38,000	447	0	0
	Totals	**5,719**	**77,609**	**912**	**1,268**	**156**

[1] Most of the available CFL acres and yield are attributable to the national forest land being studied as part of the North Fork WSA. Salvage harvest of 11 Mbf annually, not part of the timber base, is included in the yield shown.

Cultural and Paleontological Resources

Special surveys to identify resources or sensitivity areas within the WSAs were not necessary for this EIS since wilderness decisions are not expected to significantly affect cultural resources. However, as part of its planning efforts over the past several years, BLM has commissioned cultural resources overviews for each district in Oregon. These overviews offer an introduction to the broad patterns of prehistory and history in central and eastern Oregon (Boreson, *et al.* 1979; Bright n.d.; Gehr, *et al.* 1978; Toepel, *et al.* 1978 and 1979). Two other more general, and more easily accessible, sources of information about the prehistoric past of Oregon are Aikens (1984) and Cressman (1977).

There is very little specific information available about the cultural resource base of the Oregon WSAs. For the most part, lack of information reflects absence of inventories and research, not necessarily the absence of cultural resources in the WSA. Undiscovered sites almost certainly outnumber the known ones. Prehistoric and/or historic sites or values are known to exist in approximately one-third of the WSAs. This knowledge was gained as a result of occasional discoveries, cultural resources surveys which happened to cover portions of what are now WSAs, and from the previously mentioned cultural resource overviews of the BLM planning areas containing WSAs.

Six WSAs are known to contain paleontological sites (Sand Dunes, OR-1-24; Diablo Mountain, OR-1-58; Orejana Canyon, OR-1-78; Guano Creek, OR-1-132; Cottonwood Creek, OR-3-32; and Dry Creek Buttes, OR-3-56). The potential for identifying new fossil sites is related to the geology of the WSAs. New discoveries are possible in areas where sedimentary rocks are exposed in escarpments and canyons, but unlikely in the vast areas covered by basalt.

Most cultural resource sites in central and eastern Oregon are surface sites and have been disturbed to some extent by erosion, livestock trampling and illegal collecting. The relatively rare protected sites, such as rock shelters, have generally been vandalized to some extent. Cultural resource and paleontological sites may also have been disturbed by off-road vehicle use, mining and range developments. Road construction has often damaged cultural resource sites and roads provide access to sites for collectors; however, for the most part, these two factors are not problems in the WSAs. In general, therefore, cultural resources in the WSAs are probably in somewhat better condition than those elsewhere.

Recreation Use

Overall recreation use occurring in all WSAs amounts to approximately 135,300 visitor days per year. Table 3-10 indicates total estimated annual use and primary recreation activities for each WSA. Primary recreation activities are hunting, fishing, whitewater rafting, off-road vehicle play, rockhounding, day hiking, backpacking, horseback riding and cave exploration. Related uses which occur in conjunction with these primary recreation pursuits include camping, sightseeing, photography and nature study.

Deer hunting occurs in all areas where hunting is identified as a primary recreation activity. Antelope, upland game (chukar, quail) and small game are routinely hunted in most areas with adequate populations. Other species that may be hunted in specific areas include elk, bighorn sheep, bear and waterfowl.

Fishing occurs in most areas where trout populations exist.

Current recreation use of the WSAs is predominantly motor-vehicle oriented, except where terrain restricts vehicle use. Typically, vehicles are utilized on existing ways and trails to gain access to hunting, fishing and other areas of specific recreation use.

Overall, primitive recreation use of the WSAs is low. Primitive recreation activities (e.g., whitewater rafting, day hiking, backpacking and horseback riding), although gaining in popularity, are significant in only a few WSAs (primarily those associated with the John Day and Owyhee Rivers, the Desert Trail and Steens Mountain.) A primary limiting factor to primitive recreation activities is the availability of water. As is the case in most arid and semi-arid environments, the only available water is seasonal runoff in shallow intermittent drainages, reservoirs and springs. Virtually all available water requires treatment prior to drinking.

Local Personal Income

Measures of economic conditions in the base year 1981 in the local economic areas containing WSAs are shown in table 3-11. The WSAs are generally located in the less populous regions of the state. The population of the counties containing WSAs is about 16 percent of the total state population. Personal income per capita is below the state average in all of the areas except the Lower John Day area, and unemployment rates are higher in all except Jefferson and Malheur counties and the Lower John Day area. The basic industries in these areas are agriculture and forest production.

Resource outputs of an economic nature from the public lands in the WSAs include livestock grazing, recreation, and timber production. This economic analysis focuses mainly on the local personal income generated by these outputs as the primary measure of economic conditions. Addendum 1 contains a more detailed discussion of local personal income, as used in this analysis.

Table 3-12 shows the local personal income generated annually by the resource outputs of the 85 WSAs under existing conditions.

Estimates of existing conditions are based on the year 1981 except where changes since then have made the data for that year unrepresentative.

As shown in table 3-12, the local personal income generated by these activities amounts to over $3.5 million.

Table 3-10. Total Estimated Recreation Use and Primary Recreation Activities in the WSAs

WSA No. (OR-)	WSA Name	RVD/yr.	Hunting	Fishing	Whitewater Rafting	ORV Play	Rockhounding	Day Hiking/Backpacking	Horseback Riding	Cave Exploration	Other[1]	Remarks, Other Activities
1-2	Devils Garden Lava Bed	2,000						X			X	Exploration of unique lava features.
1-3	Squaw Ridge Lava Bed	400	X				X	X		X	X	
1-22	Four Craters Lava Bed	3,500	X					X			X	
1-24	Sand Dunes	3,000				X		X			X	
1-58	Diabo Mountain	100	X			X		X			X	
1-78	Orejana Rim	100	X									
1-101	Abert Rim	1,800	X					X	X		X	Bighorn sheep hunting.
1-117	Fish Creek Rim	500	X								X	
1-132	Guano Creek	100	X					X			X	
1-139	Spaulding	200	X									
1-146A	Hawk Mountain	200	X					X	X		X	
1-146B	Sage Hen Hills	100	X					X	X		X	
2-14	Malheur R.Bluebckt Cr.	100	X	X								
2-23L	Stonehouse	200	X									
2-23M	Lower Stonehouse	100	X									
2-72C	Sheepshead Mtns.	100	X					X			X	
2-72D	Wildcat Canyon	50	X					X			X	
2-72F	Heath Lake	25	X					X			X	
2-72I	Table Mountain	50	X					X			X	
2-72J	West Peak	25	X					X			X	
2-73A	East Alvord	100	X			X						
2-73H	Winter Range	100									X	
2-74	Alvord Desert	100	X			X					X	Landsailing/gliders on playa
2-77	Mahogany Ridge	800	X	X				X				
2-78	Red Mountain	100	X									
2-81	Pueblo Mountains	700	X					X				
2-82	Rincon	300	X									
2-83	Alvord Peak	100	X								X	
2-84	Basque Hills	100	X									
2-85F	High Steens	20,000	X	X				X	X		X	Trophy deer/bighorn sheep hunting
2-85G	Donner & Blitzen R.	3,000	X	X								
2-85H	Home Creek	300	X									
2-86E	Blitzen River	1,800	X	X				X			X	
2-86F	Little Blitzen Gorge	6,000	X	X				X	X		X	Trophy deer hunting
2-87	Bridge Creek	300	X	X								
2-98A	Pine Creek	50	X	X								
2-98C	Sheep Gulch	100	X									
2-98D	Indian Creek	50	X	X								
2-103	Aldrich Mountain	750	X									
3-18	Castle Rock	1,000	X									
3-27	Beaver Dam Creek	800	X									
3-31	Camp Creek	400	X									
3-32	Cottonwood Creek	400	X									
3-33	Gold Creek	200	X									
3-35	Sperry Creek	100	X									
3-47	Cedar Mountain	200						X				
3-53	Dry Creek	600	X									
3-56	Dry Creek Buttes	1,000	X									
3-59	Owyhee Breaks	3,000	X	X	X			X			X	Owyhee River float boating
3-73	Blue Canyon	1,000	X				X				X	
3-74	Upper Leslie Gulch	500	X					X			X	Bighorn sheep hunting
3-75	Slocum Creek	1,500	X					X			X	
3-77A	Honeycombs	2,000	X					X				
3-77B	Wild Horse Basin	500	X					X			X	

Table 3-10. Total Estimated Recreation Use and Primary Recreation Activities in the WSAs (continued)

WSA No. (OR-)	WSA Name	RVD/yr.	Hunting	Fishing	Whitewater Rafting	ORV Play	Rockhounding	Day Hiking/Backpacking	Horseback Riding	Cave Exploration	Other[1]	Remarks, Other Activities
3-110	Lower Owyhee Canyon	6,000	X	X	X			X			X	Owyhee River float boating
3-111	Saddle Butte	100	X							X		
3-114	Palomino Hills	50	X					X			X	
3-118	Bowden Hills	100	X					X			X	Trophy deer hunting
3-120	Clarks Butte	100	X					X		X		
3-128	Jordan Craters	800								X	X	
3-152	Willow Creek	1,200	X									
3-153	Disaster Peak	1,200	X	X							X	Trophy deer hunting
3-156	Fifteenmile Creek	1,200	X	X				X			X	Trophy deer hunting
3-157	Oregon Canyon	1,200	X	X							X	Trophy deer hunting
3-162	Twelvemile Creek	1,200	X								X	Trophy deer hunting
3-173	Upper W. Ltl. Owyhee	300	X	X				X	X		X	
3-194	Lookout Butte	100	X									
5-1	Thirtymile	5,000	X	X	X			X			X	John Day River float boating
5-6	Lower John Day	10,000	X	X	X			X			X	John Day River float boating
5-8	North Pole Ridge	10,000	X	X	X			X			X	John Day River float boating
5-9	Spring Basin	8,000	X				X	X			X	
5-21	Badlands	10,000	X					X			X	
5-31	North Fork	3,000	X	X	X			X				
5-33	South Fork	3,000	X	X			X	X	X		X	
5-34	Sand Hollow	1,500	X				X	X	X		X	
5-35	Gerry Mountain	150	X					X	X		X	
5-42	Hampton Butte	100	X				X	X	X		X	
5-43	Cougar Well	200	X				X	X	X		X	
6-1	McGraw Creek	400	X					X	X		X	
6-2	Homestead	600	X				X	X			X	
6-3	Sheep Mountain	500	X									
11-1	Mountain Lakes	100	X									
11-17	Soda Mountain	8,500						X				Pacific Crest Trail
12-8	N. Sisters Rocks	50		X							X	Rockfishing and hiking for views
12-14	Zwagg Island	50		X							X	Rockfishing and hiking for views

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[1] Includes sightseeing, photography, birdwatching, wildlife observation, camping, wild horse viewing and trapping.

RVD = Recreational Visitor Day

Table 3-11. Economic Conditions, State and Affected Local Economic Areas, 1981

	Population	Percent of State Total	Personal Income Total (millions)	Personal Income Per Capita	Total Employment
State of Oregon	2,660,735	100.0	$26,666.0	$10,022	1,205,000
Total Affected Local Economic Area	434,675	16.3	3,813.8	8,787	179,215
Central Oregon	88,800	3.3	774.5	8,721	37,530
Crook	13,200	0.5	115.6	8,758	4,900
Deschutes	63,650	2.4	549.0	8,625	27,550
Jefferson	11,950	0.4	109.9	9,197	5,080
Lower John Day	5,675	0.2	58.4	10,291	2,345
Gilliam	2,025	0.1	22.7	11,210	810
Sherman	2,225	0.1	20.8	9,348	995
Wheeler	1,425	0.1	14.9	10,456	540
Grant County	8,150	0.3	73.2	8,982	3,210
Baker County	16,300	0.6	144.7	8,877	6,710
Malheur County	27,225	1.0	234.2	8,602	11,510
Harney County	8,000	0.3	71.4	8,925	2,910
Lake County	7,600	0.3	69.8	9,184	3,260
Jackson-Klamath	192,325	7.2	1,686.6	8,770	80,780
Jackson	133,700	5.0	1,159.4	8,672	56,860
Klamath	58,625	2.2	527.2	8,993	23,920
Coos-Curry	80,600	3.0	701.0	8,697	30,960
Coos	63,300	2.4	544.5	8,602	24,620
Curry	17,300	0.7	156.5	9,046	6,340

Table 3-12. Local Personal Income Generated Annually, Existing Program, All WSAs (1981 price levels)

Resource Output	Unit of Measure	Quantity	Local Personal Income Generated
Grazing	AUM	153,288	$1,839,456
Recreation	RVD	153,300	1,623,600
Timber	MBF	156	42,120
Total			**$3,505,176**

Chapter 4 Environmental Consequences

John Day River in North Pole Ridge WSA (OR-5-8)

Introduction

This chapter analyzes the cumulative environmental consequences of each of the statewide alternatives including the proposed action. These environmental consequences (impacts) are compared to the affected environment, as described in Chapter 3. If a resource is not affected or if the impacts are considered insignificant, no discussion is included. Analysis, including the scoping process, indicates that there would be no significant impact upon air quality, energy use, climate and topography. Impacts on individual WSAs are discussed in the appendices.

Where data are limited, this analysis infers environmental consequences using knowledge of the area and professional judgement, based on observation and analysis of conditions and responses in similar areas.

Assumptions and Analysis Guidelines

The following assumptions and guidelines were used to develop the analyses in the EIS.

Funding: BLM will have the funding and work force to implement the proposed action with the possible exception of adequate funds to police boundaries to completely prevent trespass by motor vehicles.

Wilderness Uses: The Wilderness Management Policy served as the basis for determining how wilderness uses and other permissible uses, such as livestock grazing, will be managed in designated areas.

Mining and Mineral Leasing: The Wilderness Act withdrew wilderness areas from the general mining and mineral leasing laws on January l, l984. Therefore, legislation designating wilderness areas on BLM lands in Oregon would close the areas to location of mining claims and issuance of mineral leases at the time of designation. It would be possible to locate mining claims until that time in the study areas, and valid claims located by that time could be developed even if the development would impair wilderness values.

Mineral leasing in WSAs was prohibited by the 1984 Appropriations Act for the Department of the Interior and related agencies, but it is possible that leasing may be allowed in WSAs in the future. If leasing did resume in WSAs, however, the leases would stipulate that no actions which would impair wilderness values would be allowed. Therefore, the only leases where wilderness impairing activities could occur would be leases which were issued prior to passage of the 1976 Federal Land Policy and Management Act (FLPMA). Because of the "nonimpairment" stipulation in existing post-FLPMA leases, it is assumed, for purposes of analysis, that such leases would be voluntarily terminated or allowed to expire if the areas covered by these leases were designated wilderness.

Projections of likely energy and mineral development, as portrayed in Table 2-3 in Chapter 2 and described in detail in the WSA-specific appendices, took these factors into account. Other factors included potential for energy or mineral resource occurrence, the level of certainty associated with the potential for occurrence, demand for the commodity, accessibility and other physical and economic factors. The EIS assumes that wilderness designation, as portrayed under each alternative with suitable acreages, has occurred and that only the existing mining claims and mineral leases have the potential to possess valid existing rights to develop the resources under wilderness designation.

Impacts from Energy and Mineral Exploration and Development: For analysis purposes, it is assumed that consideration of reclamation of impacts is applicable only to projected exploration activities. Although current surface management regulations require reclamation upon cessation of all energy and mineral activities, the considerable variation in initiation and duration of projected development activities made it impractical to consider reclamation of developed energy and mineral production sites within the approximately 50-year period analyzed. For purposes of this analysis, then, energy and mineral development impacts are considered relatively permanent, while exploration impacts in areas where no development is projected are considered relatively temporary in nature.

Range Projects: The following guidelines were used to predict, for analysis purposes, the extent to which wilderness designation would restrict or preclude projected development of range management projects in the WSAs. The guidelines are based on BLM's Wilderness Management Policy. Actual development of rangeland projects in a designated wilderness area would depend on the outcomes of site-specific environmental analyses.

1. Non-structural rangeland projects such as seedings and brush control (vegetative manipulation) could be developed in a wilderness area only where they were part of the management practiced at the time the wilderness was established and where continuing

these practices is necessary to maintain livestock grazing operations. Therefore, new seeding or brush control projects proposed in land use plans to increase livestock forage production could not be developed in a wilderness area. The increase in forage production which would be foregone if a study area were designated wilderness and the proposed range developments could not be developed is considered an opportunity cost attributable to wilderness designation.

2. New structural rangeland projects such as fences and waterholes could be constructed in a WSA or designated wilderness if they are needed to protect rangeland and/or wilderness resources and to effectively manage these resources, rather than to accommodate increased numbers of livestock. If they meet this criterion, the projects could be installed after an area was designated wilderness.

Motorized Vehicles: Although motorized vehicles and equipment normally are not allowed in wilderness, the Wilderness Management Policy allows some exceptions. One of these exceptions is to allow the use of motorized vehicles and equipment by livestock operators as stipulated in individual permits where there are no practical alternatives for maintenance of rangeland projects and management of livestock.

Acquisition of Inholdings: For purposes of analysis, it is assumed that state and private inholdings would not be acquired under the all wilderness alternative.

Short Term and Long Term: For purposes of analysis and as used in developing resource use projections of reasonably foreseeable future actions, short term is defined as the period of up to 50 years from completion of this EIS. Long term is defined as the period beyond the 50-year projections.

Impact Analysis

The following discussion and tables describe the significant impacts by resource topic under each alternative. The tables omit either the all wilderness or no wilderness/no action column when the alternative is not applicable to the impacts being described (e.g., impacts to wilderness values in nonsuitable areas under the all wilderness alternative, or impacts to other resources from wilderness management under the no wilderness/no action alternative).

Alternative 1: All Wilderness

Recommended suitable for wilderness: 2,652,234 in 85 WSAs

Recommended nonsuitable for wilderness: 0 acres

Impacts on Wilderness Values

Wilderness designation of 2,652,234 acres would preserve a wide variety of wilderness values. Remnants of the natural landscape in the high desert, on the margins of the Ochoco, Blue and Wallowa Mountains, on the Columbia Plateau, on the eastern slopes of the Cascade Mountains, in the lower elevations of the Siskiyou Mountains, and on the coastal islands would be maintained under the All Wilderness Alternative in a condition close to that which now exists.

Closure of 1,139 miles of ways through wilderness designation under this alternative would result in restoration of approximately 1,139 acres to a more natural condition as the ways revegetate. Eliminating motorized vehicle use of these ways would eliminate the visual and noise influence over approximately 159,500 acres in all of the WSAs combined, thereby enhancing naturalness and opportunities for solitude and primitive recreation.

Wilderness designation would also ensure preservation of special wilderness features in the WSAs, such as biological, geological, cultural and paleontological features. Table 4-1 shows the number of areas in which special wilderness features would be protected by wilderness designation under this alternative.

With respect to ecosystem diversity, all Bailey-Kuchler ecosystems identified in the study areas would be represented in the NWPS, including the alpine meadows and barren ecosystem in the Intermountain Sagebrush Province and the sagebrush steppe ecosystem in the Palouse Grassland Province, both of which would be represented for the first time through wilderness designation under this alternative. Table 4-2 identifies the number of WSAs with a given Bailey-Kuchler ecosystem which would be added to the NWPS through wilderness designation.

The All Wilderness Alternative would similarly add to the NWPS representations of all Oregon Natural Heritage Plan (ONHP) vegetative communities identified in the WSAs. Most of these communities would likely be the first representations in the national system since almost all existing wilderness areas in Oregon and adjacent states are in different

Table 4-1. Special Wilderness Features Included in Areas Recommended Suitable for Wilderness Designation

	Number of Areas[1]					
Special Features	Alt. 1 All Wld.	Alt. 2 Wld. Emp.	Alt. 3 Con. Res.	Alt. 4 Eco. Div.	Alt. 5 P.A.	Alt. 6 Com. Dvl.
Geologic features						
Lava fields and related features	6	5	5	4	4	3
High fault-block scarps	15	15	15	13	13	4
Unusual erosional forms	11	11	11	11	11	7
Other geologic features[2]	27	25	21	23	20	8
Plants						
Uncommon plant communities or Diverse plant associations	21	20	18	17	15	5
Plants of special interest	32	31	22	24	22	11
Other botanical features[2]	10	8	8	8	8	6
Animals						
Northern bald eagle	12	9	9	9	8	3
Existing or potential bighorn sheep habitat	24	21	19	23	20	10
Crucial deer winter range	21	20	16	14	14	9
Sage grouse strutting grounds	4	4	3	3	3	2
Raptor concentrations and/or excellent raptor habitat	14	13	12	10	11	7
Kit fox	13	12	7	6	5	2
Other animals[2]	85	77	63	64	58	27
Cultural resources	30	27	25	24	22	10
Paleontological resources	6	5	4	5	4	3

[1] Adjacent WSAs with common special features are counted separately.

[2] When two different special features are located within one WSA, each special feature is counted separately. A complete list of these "other" features appears in the footnotes to table 3-2.

ecological life zones than those in which the study areas are located. Furthermore, only a few study areas preliminarily recommended suitable for wilderness in adjacent states have vegetative communities similar to some of the communities in the Oregon study areas. Table 4-3 shows the ONHP vegetative communities that would be represented in the NWPS under this alternative.

Table 4-4 shows the acres of additional wilderness that would be designated within 5 hours' driving time of major population centers (standard metropolitan statistical areas).

The All Wilderness Alternative would better balance the geographic distribution of wilderness in the NWPS, since the new wilderness areas would be located in an area which now contains little wilderness. The elevational distribution would also be better balanced because most of the new wilderness would be at lower elevations than existing wilderness. The lower elevation areas would be available for some types of primitive recreational activities during different seasons than many of the high elevation areas already designated wilderness.

Conclusion: Wilderness designation of 2,652,234 acres in all 85 WSAs would result in protection and enhancement of existing wilderness values. Two Bailey-Kuchler ecosystems not currently represented in the NWPS would be added to the system.

Table 4-2. Number of WSAs with Bailey-Kuchler Ecosystems Included in Areas Recommended Suitable for Wilderness Designation

Bailey-Kuchler Ecosystems Represented in BLM Wilderness Study Areas in Oregon	Number of WSAs					
	Alt. 1 All Wld.	Alt. 2 Wld. Emp.	Alt. 3 Con. Res.	Alt. 4 Eco. Div.	Alt. 5 P.A.	Alt. 6 Com. Dvl.
PROVINCE POTENTIAL NATURAL VEGETATION						
Intermountain Sagebrush						
Sagebrush Steppe	67	60	44	41	38	17
Saltbush-Greasewood	18	18	10	10	8	1
Alpine Meadows and Barren	3	3	3	2	2	1
Rocky Mountain Forest						
Wheatgrass-Bluegrass	3	2	2	2	1	1
Western Ponderosa Forest	5	2	0	5	0	0
Grand Fir-Douglas Fir Forest	5	2	0	4	0	0
Sagebrush Steppe	1	1	0	1	0	0
Palouse Grassland						
Sagebrush Steppe	4	4	4	4	4	3
Wheatgrass-Bluegrass	4	4	4	4	4	3
Sierran Forest						
Mixed Conifer Forest	1	1	1	1	1	1
Chaparral	1	1	1	1	1	1
Pacific Forest						
Cedar-Hemlock-Douglas Fir Forest	1	1	1	1	1	1
Spruce-Cedar-Hemlock Forest	2	2	2	2	2	2
Fir-Hemlock Forest	1	1	1	1	1	1

Impacts on Energy and Mineral Development

Under this alternative, a total of 2,498,399 acres would be withdrawn from all forms of appropriation. See Tables 4-6 and 4-7 for the acres of each mineral commodity with moderate or high potential for occurrence that would be withdrawn by wilderness designation.

Wilderness designation would withdraw some lands nominated as Areas of Critical Mineral Potential (ACMP), subject to valid existing rights. Lands within ACMPs that would be withdrawn by wilderness designation include 87,247 acres with high potential for the occurrence of oil and gas and 60,664 acres with high potential for the occurrence of gold and mercury.

Projected development of 35 oil and gas production wells, six geothermal powerplants (totaling 80 megawatts), 27 metallic mines, and 14 non-metallic/evaporite mines would be precluded by wilderness designation. Projected development of four metallic mines and 12 non-metallic/evaporite mines would occur on valid existing claims or private and split-estate lands within the WSA boundaries.

Conclusion: Withdrawal of 2,498,399 acres to mineral entry from wilderness designation would result in foregone production from 35 projected oil and gas wells, six geothermal powerplants (totaling 80 megawatts), and 41 projected mine sites for metallic and non-metallic minerals. Projected development of 16 metallic and non-metallic mines would occur on valid existing claims and private and split-estate lands.

Impacts on Watershed

Of the approximately 540 miles of perennial streams in the WSAs, water quality and quantity would improve, and sedimentation would be reduced, on

Table 4-3. Oregon Natural Heritage Plan Vegetative Communities Included in Areas Recommended Suitable for Wilderness Designation

	(X Denotes Vegetative Community Included)					
Vegetative Communities Physiographic Province	**Alt. 1 All Wld.**	**Alt. 2 Wld. Emph.**	**Alt. 3 Con. Res.**	**Alt. 4 Eco. Div.**	**Alt. 5 P.A.**	**Alt. 6 Com. Dvl.**
Big sagebrush/bluebunch wheatgrass						
Basin and Range	X	X	X	X	X	X
Owyhee Uplands	X	X	X	X	X	X
High Lava Plains and Columbia Basin	X	X	X	X	X	X
Big sagebrush/Idaho fescue						
Basin and Range	X	X	X	X	X	X
Owyhee Uplands	X	X	X	X	X	[1]
High Lava Plains and Columbia Basin	X	X	X	X	X	X
Big sagebrush on Steens Mountain						
Basin and Range	X	X	X	X	X	X
Big sagebrush-bitterbrush/Idaho fescue						
Basin and Range	X	X	X	X	X	X
Big sagebrush/bunchgrass community inside forest zone						
Ochoco, Blue and Wallowa Mountains	X	X	X	X	X	X
Big sagebrush-greasewood						
Basin and Range	X	X	X	X	X	X
Big sagebrush-spiny hopsage						
Basin and Range	X	X	X	X	X	X
Low sagebrush/bluebunch wheatgrass						
Basin and Range	X	X	X	X	X	
Owyhee Uplands	X	X	X	X	X	X
Low sagebrush/Idaho fescue						
Basin and Range	X	X	X	X	X	X
Owyhee Uplands	X	X	X	X	X	X
High Lava Plains and Columbia Basin	X	X	X	X	X	
Low sagebrush/Sandberg's bluegrass						
Basin and Range	X	X	X	X	X	X
Owyhee Uplands	X	X	X	X	X	
Low sagebrush on Steens Mountain						
Basin and Range	X	X	X	X	X	
Low sagebrush/bunchgrass community inside forest zone						
Ochoco, Blue and Wallowa Mountains	X	X		X		
Silver sage						
Basin and Range	X	X	X	X	X	X
Black sagebrush community complex						
Basin and Range	X	X	X	X	X	X
Rigid sagebrush/Sandberg's bluegrass community						
High Lava Plains and Columbia Basin	X	X	X	X	X	X
Rigid sagebrush scabland						
Ochoco, Blue and Wallowa Mountains	X	X		X		
Greasewood-saltgrass						
Basin and Range	X	X	X	X	X	X
Shadscale-spiny hopsage-budsage						
Basin and Range	X	X	X	X	X	X
Winterfat						
Basin and Range	X	X	X	X	X	X
Alkaline vegetation mosaic with representative communities, including greasewood, shadscale, saltgrass and spiny hopsage types						
Owyhee Uplands	X	X	X	X	X	[1]
Bitterbrush/bunchgrass						
Ochoco, Blue and Wallowa Mountains	X	X	X	X		
Bitterbrush-sagebrush/snowberry on Steens or Trout Creek Mountains						
Basin and Range	X	X	X	X	X	X
Snowbrush and bittercherry community complex						
Basin and Range	X	X	X	X	X	
Bluebunch wheatgrass/Sandberg's bluegrass						
High Lava Plains and Columbia Basin	X	X	X	X	X	X
Bluebunch wheatgrass-Idaho fescue and Sandberg's bluegrass complex						
Ochoco, Blue and Wallowa Mountains	X	X	X	X	X	X

Table 4-3. Oregon Natural Heritage Plan Vegetative Communities Included in Areas Recommended Suitable for Wilderness Designation (continued)

Vegetative Communities Physiographic Province	Alt. 1 All Wld.	Alt. 2 Wld. Emph.	Alt. 3 Con. Res.	Alt. 4 Eco. Div.	Alt. 5 P.A.	Alt. 6 Com. Dvl.
	(X Denotes Vegetative Community Included)					
Idaho fescue-bluebunch wheatgrass						
High Lava Plains and Columbia Basin	X	X	X	X	X	X
Indian ricegrass-needlegrass						
Basin and Range	X	X	X	X	X	X
Great Basin wilde rye						
Basin and Range	X	X		X		
High elevation fescue grassland						
Basin and Range	X	X	X	X	X	
Alpine communities on Steens Mountain including snow deflation communities and moderate snow cover communities						
Basin and Range	X	X	X	X	X	X
Alpine communities on Steens Mountain including downslope snow accumulation areas and upper cirque communities						
Basin and Range	X	X	X	X	X	X
Western juniper/big sagebrush/bluebunch wheatgrass						
Basin and Range	X	X	X	X	X	X
Owhyee Uplands	X	X		X		
High Lava Plains and Columbia Basin	X	X	X	X	X	X
Western juniper/big sagebrush/Idaho fescue						
Basin and Range	X	X	X	X	X	X
Western juniper/big sagebrush						
Ochoco, Blue and Wallowa Mountains	X	X		X		
Western juniper/bluebunch wheatgrass						
Ochoco, Blue and Wallowa Mountains	X	X		X		
High Lava Plains and Columbia Basin	X	X	X	X	X	
Western juniper/rigid sagebrush/Sandberg's bluegrass						
Ochoco, Blue and Wallowa Mountains	X	X		X		
Western juniper/low sagebrush/Sandberg's bluegrass						
Basin and Range	X	X	X	X	X	X
Western juniper/low sagebrush/bunchgrass community						
Ochoco, Blue and Wallowa Mountains	X	X	X	X	X	
Western juniper/Idaho fescue						
High Lava Plains and Columbia Basin	X	X	X	X	X	X
Mountain mahogany in southern Basin and Range						
Basin and Range	X	X	X	X	X	X
High Lava Plains and Columbia Basin	X	X	X	X	X	X
Mountain mahogany/bunchgrass						
Ochoco, Blue and Wallowa Mountains	X	X		X		
Aspen groves						
Basin and Range	X	X	X	X	X	X
Black cottonwood riparian area						
Basin and Range	X	X	X	X	X	X
Narrowleaf cottonwood and Mormon tea community complex						
Basin and Range	X	X	X	X	X	
Low elevation riparian forest, with cottonwood, hawthorn, and alder						
Ochoco, Blue and Wallowa Mountains	X	X		X		
High elevation riparian forest, with birch, alder and dogwood						
Ochoco, Blue and Wallowa Mountains	X	X		X		
Ponderosa pine savanna						
Basin and Range	X	X	X	X	X	X
Ponderosa pine/bunchgrass communities in the Blue Mountains with separate areas of Idaho fescue and bluebunch wheatgrass						
Ochoco, Blue and Wallowa Mountains	X	X		X		
Ponderosa pine/bitterbrush/Idaho fescue						
High Lava Plains and Columbia Basin	X	X	X	X	X	X
Ponderosa pine-western juniper/big sagebrush						
High Lava Plains and Columbia Basin	X	X		X		

Table 4-3. Oregon Natural Heritage Plan Vegetative Communities Included in Areas Recommended Suitable for Wilderness Designation (continued)

	(X Denotes Vegetative Community Included)					
Vegetative Communities Physiographic Province	Alt. 1 All Wld.	Alt. 2 Wld. Emph.	Alt. 3 Con. Res.	Alt. 4 Eco. Div.	Alt. 5 P.A.	Alt. 6 Com. Dvl.
Douglas fir-ponderosa pine/pinegrass Ochoco, Blue and Wallowa Mountains	X	X	X	X		
Ponderosa pine/bitterbrush/bunchgrass Ochoco, Blue and Wallowa Mountains	X	X		X		
Ponderosa pine/big sagebrush High Lava Plains and Columbia Basin	X	X	X	X	X	X
Ponderosa pine-Douglas fir forest in the eastern Siskiyous Siskiyou Mountains	X	X	X	X	X	X
Mixed evergreen (Douglas fir and mixed evergreen hardwoods) Siskiyou Mountains	X	X	X	X	X	X
White fir forest Siskiyou Mountains	X	X	X	X	X	X
Southwestern Oregon mixed conifer forest Western Slopes and Crest	X	X	X	X	X	X
Xeric and Mesic Mountain meadows-forest mosaic Western Slopes and Crest	X	X	X	X	X	X
Grass bald Western Slopes and Crest	X	X	X	X	X	X
Grassland Mosaic Oregon Interior Valleys	X	X	X	X	X	X
Chaparral Oregon Interior Valleys	X	X	X	X	X	X
Mixed conifer forest (pine, Douglas fir and true firs) Eastern Slopes, Oregon Cascades	X	X	X	X	X	X
Douglas fir/mallow ninebark Ochoco, Blue and Wallowa Mountains	X	X	X	X	X	X
Douglas fir/ponderosa pine/elk sedge Ochoco, Blue and Wallowa Mountains	X	X	X	X		
Sand dune series (beachridges), from active unrevegetative dunes through completely stabilized (with greasewood, hopsage, Indian ricegrass and wild rye) Basin and Range	X	X	X	X	X	X
Dunes and shifting sand High Lava Plains and Columbia Basin	X	X		X		
Bare playa and playa margin Basin and Range	X	X	X	X	X	X
Playa and associated greasewood flats High Lava Plains and Columbia Basin	X	X		X		
Moist native bluegrass meadows Ochoco, Blue and Wallowa Mountains	X			X		

[1] These communities are included in proposed action for WSA OR-3-195, Owyhee Canyon, which was analyzed in the Owyhee Canyonlands EIS. Also included in that WSA is the big sagebrush Great Basin wild rye community of the Owyhee Uplands Province.

143 miles in 14 WSAs due to riparian fence construction, implementation of projected watershed improvements, and closure of ways. The condition of the remaining perennial streams would be unchanged.

Conclusion: Watershed conditions would improve on 143 miles of perennial streams, with approximately 397 miles of perennial streams remaining in their current condition.

Impacts on Vegetation

Table 4-8 lists acres of vegetation change by particular activities in each of three categories: l) vegetation alteration (due to harvest of timber and minor wood products and to projected vegetation manipulation for livestock grazing and wildlife habitat management); 2) vegetation removal (due to projected energy and mineral development and to construction of utility corridors, and livestock and wildlife facilities); and 3) vegetation addition (natural revegetation resulting from closure of roads and ways). Road construction

Table 4-4. Acres Recommended Suitable for Wilderness Within Five Hours' Drive of Population Centers[1,2]

Population Centers Within Five Hours' Drive of the WSAs	Acres Recommended Suitable Alt. 1 All Wld.	Alt. 2 Wld. Emp.	Alt. 3 Con. Res.	Alt.4 Eco. Div.	Alt.5 P.A.	Alt.6 Com. Dvl.
Oregon						
Eugene-Springfield	410,585	374,767	241,087	307,441	284,787	127,090
Medford	692,811	618,610	310,559	365,515	336,955	155,103
Portland	259,568	238,550	145,973	194,194	155,100	82,553
Salem	472,691	351,673	197,136	279,347	240,253	82,553
Washington						
Kennewick-Richland-Pasco	273,140	240,488	154,356	193,609	150,740	78,193
Tacoma-Everett-Seattle	33,494	33,426	23,785	33,426	33,426	24,283
Yakima	154,073	145,405	91,673	119,484	96,830	24,283
Idaho						
Boise	2,324,395	2,045,792	1,046,128	971,039	872,330	269,118
Nevada						
Reno	599,555	557,215	215,683	193,538	193,538	72,058
California						
Redding	239,427	203,347	136,924	137,157	137,157	40,087

[1] Population centers are Standard Metropolitan Statistical Areas (SMSAs) with population over 100,000.
[2] A standard 200-mile radius was used to approximate a 5-hour drive.

associated with energy and mineral development and timber harvest is included in the acreage given under those activities. Under this alternative, vegetation alteration would occur on 10,580 acres. Vegetation would be removed from 1,450 acres while natural revegetation would occur on 1,140 acres.

In addition to the predicted vegetation changes above, the condition of riparian vegetation growing along 128 miles of perennial streams would improve in 17 WSAs due to riparian fence construction and closure of ways. A decline in riparian vegetation is not predicted under this alternative. The condition of the remaining 412 miles of riparian vegetation would be unchanged.

Lower utilization and more residual ground cover than at present are expected in seven WSAs where reductions totaling approximately 3,330 AUMs are projected.

There are 30 WSAs with plant species of special interest. Of these, actions in six WSAs are projected to occur in the vicinity of habitat of special interest species and could potentially threaten these populations. Where such conflict exists, mitigation measures and monitoring would avoid or minimize impacts to these populations.

Conclusion: Vegetation alteration would occur on 10,580 acres; vegetation would be removed from 1,450 acres, and 1,140 acres would revegetate. Riparian vegetation would improve on 128 miles of streams. Residual ground cover would increase in seven WSAs due to livestock use reductions. Projected actions in six WSAs would potentially threaten the habitat of plant species of special interest.

Impacts on Wildlife

Wildlife habitat would generally be protected on 2,652,234 acres recommended suitable for wilderness designation under this alternative. Habitat would be altered or reduced on approximately 12,030 acres as a result of projected energy and mineral, livestock and wildlife developments. Table 4-8 lists the acres of vegetation (or habitat) change caused by various activities projected to occur under this alternative.

A total of 11,585 acres of habitat change are a result of the projected implementation of wildlife projects.

Table 4-5. Acres Directly and Indirectly Affected by Projected Management Activities Under Alternatives with Nonsuitable Acreages

	Alt. 2 Wld. Emp.		Alt. 3 Con. Res.		Alt. 4 Eco. Div.		Alt. 5 P.A.		Alt. 6 Com. Dvl.		Alt. 7 No. Wld.	
Management Action	Acres Directly Affected	Acres Indirectly Affected	Acres Directly Affected	Acres Indirectly Affected	Acres Directly Affected	Acres Indirectly Affected	Acres Directly Affected	Acres Indirectly Affected	Acres Directly Affected	Acres Indirectly Affected	Acres Directly Affected	Acres Indirectly Affected
Energy/Mineral Development	3,250	65,880	5,980	109,000	5,460	89,220	5,650	104,560	8,090	147,950	6,980	149,790
Livestock Facilities	1,370	7,280	29,600	28,440	30,910	31,470	30,920	31,920	31,450	32,570	33,530	40,380
Veg. Manip. for Livestock	0	21,910	2,500	231,570	2,500	234,300	2,500	234,700	2,500	361,880	2,500	363,380
Wildlife Facilities	1,660	720	5,840	2,670	2,780	1,800	5,780	1,800	6,710	21,080	11,820	14,170
Veg. Manip. for Wildlife	0	8,780	0	61,180	0	57,880	0	61,880	0	78,080	0	86,180
Watershed Projects	20	1,400	20	2,200	20	2,200	20	2,200	20	3,030	20	3,030
Timber Harvest	0	740	20	2,590	0	0	120	3,590	20	2,590	120	4,530
Minor Forest Products Harvest	0	630	270	8,120	0	1,750	0	1,750	0	8,320	270	10,220
Utility Corridor Development	70	10,300	200	20,950	190	19,150	200	20,950	210	22,080	210	22,230
Increased Vehicle Use of Routes	0	1,500	0	12,820	0	1,500	0	12,820	0	18,720	0	34,320
TOTAL	6,370	119,140	44,430	479,540	41,860	439,270	45,190	476,170	49,000	696,300	55,450	728,230

These projects are designed to improve habitat, and oftentimes, populations of various species of wildlife. Development of water sources benefits most species in the WSAs, while brush control projects tend to benefit primarily big game species, such as deer and antelope. These brush control projects can have a detrimental effect on other species of wildlife, such as sage grouse or small mammals and birds, which depend on brushy areas for nesting and cover. Table 4-9 lists the wildlife improvement projects which would be precluded by wilderness designation under this alternative.

In addition to the habitat changes discussed above, riparian habitat would improve along 128 miles of streams in 17 WSAs as a result of riparian fence construction, implementation of stream channel and wetland projects and other watershed projects, and closure of ways. Conditions and trends on the remainder of riparian habitat in WSAs would be unchanged.

Under this alternative, reintroduction of bighorn sheep to their native ranges would occur in 11 WSAs. In

Table 4-6. Acres of High Mineral Potential Withdrawn by Wilderness Designation

Mineral Commodity	Acres Withdrawn					
	Alt. 1 All Wld.	Alt. 2 Wld.Emp.	Alt. 3 Con.Res.	Alt. 4 Eco.Div.	Alt. 5 P.A.	Alt. 6 Com.Dvl.
Metals:						
Chromium[1]	408	0	0	408	0	0
Copper[1]	137,732	116,503	58,037	56,827	47,605	2,040
Gold	201,231	131,478	64,637	62,686	54,205	2,040
Mercury[1]	133,820	117,247	52,806	47,605	47,605	2,040
Molybdenum	112,560	95,322	52,806	47,605	47,605	2,040
Silver[1]	177,222	106,528	58,037	56,827	47,605	2,040
Zinc[1]	1,440	11,120	0	0	0	0
Energy:						
Geothermal	42,652	20,196	5,080	5,330	4,050	0
Oil & Gas	87,247	81,967	40,342	36,382	24,512	0
Uranium	1,440	1,120	0	0	0	0
Non-Metals:						
Aggregate	95,650	100,880	0	0	0	0
Bentonite	2,000	920	920	160	160	0
Cinders	480	480	480	480	480	480
Limestone	1,440	1,440	1,390	1,440	1,440	0
Optical Calcite	39,960	29,100	5,600	5,600	5,600	5,600
Perlite	100	100	0	0	0	0
Semi-Precious Gems	76,260	73,560	50,060	50,060	50,060	0
Slab Lava	600	600	600	600	600	600
Zeolites	0	0	0	0	0	0

[1]Mineral is on the strategic and critical materials stockpile list.

addition, stocking of fish, including reintroduction of some native fish species, would occur in streams, reservoirs or lakes within eight WSAs.

Conclusion: Wildlife habitat would be protected on 2,652,234 acres designated wilderness. Habitat change or reduction would occur on 12,030 acres. A total of 128 miles of riparian habitat would be improved.

Impacts on Livestock Grazing

Currently, the estimated livestock use in the WSAs is 153,288 AUMs. A decrease of 3,328 AUMs is projected as a result of precluded projects that have been proposed to eliminate potential shortages of available forage in seven WSAs. Table 4-10 lists all of the projected livestock improvements that would be precluded in WSAs by wilderness designation, including those designed to either improve livestock management, accommodate increased numbers of livestock or eliminate potential shortages of livestock forage.

Closure of a total of 1,139 miles of ways through wilderness designation would result in inconvenience and increased costs to livestock operators where such routes are utilized for day-to-day livestock management and facility inspection. Periodic use of

Table 4-7. Acres of Moderate Mineral Potential Withdrawn by Wilderness Designation

	Acres Withdrawn					
Mineral Commodity	**Alt. 1 All Wld.**	**Alt. 2 Wld.Emp.**	**Alt. 3 Con.Res.**	**Alt. 4 Eco.Div.**	**Alt. 5 P.A.**	**Alt. 6 Com.Dvl.**
Metals:						
Beryllium[1]	11,460	12,420	9,520	9,520	9,520	0
Chromium[1]	9,395	9,395	0	9,395	0	0
Copper[1]	381,955	370,965	75,460	117,128	116,720	86,755
Gold	598,083	548,595	270,477	248,964	247,815	126,315
Lead[1]	2,000	2,000	1,640	2,000	2,000	2,000
Lithium	30,975	30,975	4,935	30,975	30,975	2,770
Mercury[1]	545,163	536,355	185,820	193,080	193,080	92,175
Molybdenum	87,205	58,805	12,440	21,590	21,590	19,275
Silver[1]	336,647	290,485	227,707	210,553	213,145	83,755
Tin[1]	10,600	10,600	10,600	10,600	7,600	10,600
Zinc[1]	5,735	5,735	4,935	5,735	5,735	2,770
Evaporites:						
Boron	25,240	25,240	0	25,240	25,240	0
Potassium	25,240	25,240	0	25,240	25,240	0
Sodium	25,240	25,240	0	25,240	25,240	0
Energy:						
Geothermal	694,961	685,844	434,745	497,323	480,475	63,304
Oil & Gas	1,041,246	852,460	529,234	490,355	437,115	85,403
Uranium	39,320	31,980	28,700	28,700	28,700	0
Thorium	28,520	30,200	28,700	28,700	28,700	0
Non-Metals:						
Aggregates	5,982	5,982	5,399	5,982	5,982	5,982
Asbestos[1]	9,395	9,395	0	9,395	0	0
Bentonite	281,932	234,275	189,560	190,720	189,560	16,800
Diatomite	336,550	331,245	63,990	125,050	108,040	26,500
Fluorite[1]	62,955	67,580	52,255	52,255	52,255	0
Limestone	68,400	68,400	13,970	68,400	68,400	0
Optical Calcite	89,860	41,540	21,300	39,000	39,000	39,000
Perlite	129,540	117,840	74,200	91,900	91,900	55,200
Pumice	10,600	10,600	10,600	10,600	10,600	10,600
Sand & Gravel	3,010	3,010	2,690	3,010	3,010	0
Semi-Precious Gems	500	500	380	660	500	0
Slab Lava	4,110	4,110	4,110	4,110	4,110	4,110
Zeolites	237,262	187,685	135,880	136,120	135,120	10,600

[1] Mineral is on the strategic and critical materials stockpile list.

Table 4-8. Vegetation Change by Projected Activity

	Acres of Change						
Activity	Alt. 1 All Wld.	Alt. 2 Wld.Emp	Alt. 3 Con.Res.	Alt. 4 Eco.Div.	Alt. 5 P.A.	Alt. 6 Com.Dvl.	Alt.7 No. Wld.
Alteration:							
Timber Harvest	0	98	1,539	0	1,268	1,268	1,873
Minor Wood Products	0	691	9,220	2,251	2,251	8,820	9,820
Vegetation Manipulation for Wildlife	10,580	15,180	40,600	40,724	47,724	64,244	72,954
Vegetation Manipulation for Watershed	0	1,390	2,190	2,190	2,190	2,990	2,990
Vegetation Manipulation for Livestock	0	4,725	55,325	54,727	55,007	73,357	77,482
Subtotal (rounded):	10,580	22,080	108,870	99,890	108,440	150,680	165,120
Removal:							
Energy and Mineral Development	444	3,250	5,980	5,460	5,650	8,090	6,980
Utility Corridor Development	0	70	200	190	200	210	210
Range Facilities	0	1,370	29,600	30,910	30,920	31,450	33,530
Wildlife Facilities	1,005	1,660	5,840	2,780	5,780	6,710	11,820
Subtotal (rounded):	1,450	6,350	41,620	39,340	42,550	46,460	52,540
Addition:							
Road Closure	0	748	196	192	192	52	0
Way Closure	1,139	1,035	449	511	460	96	0
Subtotal (rounded):	1,140	1,780	640	700	650	150	0
Total Vegetation Change (rounded)	13,170	30,210	151,130	139,930	151,640	197,290	217,660

Table 4-9. Projected Wildlife Improvements which would be Precluded by Wilderness Designation

	Number, Miles or Acres of Projects Precluded					
Wildlife Projects	Alt. 1 All Wld.	Alt. 2 Wld. Emp.	Alt. 3 Con. Res.	Alt. 4 Eco. Div.	Alt. 5 P.A.	Alt. 6 Com. Dvl.
Catchments/Guzzlers (No.)	41	36	26	15	13	7
Fences (Miles)	13.6	15	2.6	4	4	4
Stream Channel/Wetlands Projects (No.)	4	4	1	1	1	0
Fish Stocking Projects (No.)	1	1	0	0	0	0
Brush Control Without Seeding (Acres)	49,400	48,200	31,900	31,900	24,700	9,100
Brush Control With Seeding (Acres)	12,974	9,574	454	530	530	0

Table 4-10. Projected Range Improvements which would be Precluded by Wilderness Designation

	Number, Miles or Acres of Projects Precluded					
Range Improvements	Alt. 1 All Wld.	Alt. 2 Wld. Emp.	Alt. 3 Con. Res.	Alt. 4 Eco. Div.	Alt. 5 P.A.	Alt. 6 Com. Dvl.
Reservoirs & Waterholes (number)	116	104	55	48	43	16
Springs (number)	42	41	24	28	27	13
Storage Tanks (number)	5	5	2	2	2	1
Wells (number)	7	6	2	1	1	0
Pipelines (miles)	123	113	32	32	32	11
Fence (miles)	130	125	41	42	33	9
Vegetative Manipulation Including Seeding (acres)	24,842	22,887	6,087	5,575	5,295	1,665
Vegetative Manipulation Without Seeding (acres)	50,140	48,350	15,090	14,680	14,680	2,460
Juniper Control Without Seeding	2,500	2,500	980	2,500	2,500	0

vehicles for major facility maintenance needs or to continue established water hauling would be allowed on a case-by-case basis, where no other means are practical, as projected in the individual appendices.

Conclusion: Livestock would be managed at the estimated overall level of 149,960 AUMs in the WSAs. Use would decrease by a total of 3,328 AUMs in seven WSAs.

Impacts on Utility Corridor Routing

Wilderness designation would preclude the creation or expansion of utility corridors within wilderness boundaries. Map 7 displays all of the existing and proposed utility corridors in or near the WSAs. The four WSAs identified in the Affected Environment as potential significant obstacles to projected utility corridors would be designated wilderness under this alternative.

Wilderness designation of the Basque Hills WSA would create an obstacle to the potential east-west utility corridor. This corridor could serve as a regional intertie as well as transmit power from coal-fired generating plants in Montana or Wyoming to the West Coast. There are a variety of other options available to increase east-west transmission capacity including new corridors or additional lines in existing corridors to the north and south.

Designation of the Saddle Butte WSA would create an obstacle to the potential north-south utility corridor through Malheur county. This corridor could serve as a major regional intertie which would facilitate the long-term sale and transmission of surplus Northwest power to California, sales of excess seasonal power, and alternative routing of power in the event of a line loss elsewhere. There are a wide variety of other options available for increasing north-south power transmission capability within existing corridors or for designating new north-south transmission corridors; however, the potential corridor through Malheur County is relatively straight and has other features desirable for a regional power system.

The alternative corridor location around the Basque Hills WSA is estimated to be 4.4 miles longer than the corridor suggested by utility interests, which is the preferred route in BLM's land use plan. The alternative corridor location around the Saddle Butte WSA would be 9.3 miles longer than the utility interests' suggested corridor, which is also the preferred route in BLM's land use plan.

Designation of the Alvord Desert WSA would create an obstacle to both the east-west corridor and the north-south corridor. If the east-west corridor was relocated to the south of the Alvord Desert WSA and then constrained to the US 95 highway/powerline rights-of-way (between the Bowden Hills and Alvord Desert WSAs), the alternative route is estimated to be

3.0 miles longer than the corridor suggested by utility interests. If the transmission facilities could not be placed between the two WSAs, a second alternative route to the south and east of the Bowden Hills WSA would be an estimated 11.5 miles longer.

Designation of both the Bowden Hills and Alvord Desert WSAs under this alternative would require minor rerouting and an estimated 0.4-mile longer north-south corridor, if the facility could be placed within the existing US 95 highway/powerline rights-of-way. This is the preferred route in BLM's land use plan. If this narrow (short-cut) corridor was not prudent, feasible or acceptable, an alternative route to the east of Bowden Hills WSA would be required. This alternative route is estimated to be 3.4 miles longer than the corridor suggested by utility interests.

The combined alternative routes for the east-west corridor would be an estimated 7.4 miles longer assuming the narrow (short-cut) corridor or "window" along Highway US 95 is available and acceptable. The combined alternative route for the proposed east-west corridor would be an estimated 15.9 miles longer than the industry proposed route if it is necessary to route the corridor to the south and east of Bowden Hills WSA.

The combined alternative routes for the north-south corridor would be an estimated 9.7 miles longer if the US 95 window (short-cut) is available and 12.7 miles longer if the route is relocated east of the Bowden Hills WSA.

Both Pacific Power & Light (PP&L) and Bonneville Power Administration (BPA) have indicated a potential need for the east-west corridor while only BPA has expressed interest in the north-south corridor. Both proponents agree that the longer routes would involve higher costs associated with construction, maintenance, and line load energy loss.

Table 4-11 provides estimates of the increased construction costs as well as increased annual maintenance costs for AC and DC lines on the longer routes that would be required for the corridors.

The added cost of annual line load energy loss caused by internal resistance within the powerline itself is also indicated in the table. This power loss can also be expressed in kilowatt hours, which can be translated into power needed to supply typical households in Oregon. Using an average line load loss of 306,600 kilowatt hours/year/mile of single circuit 500- kV AC line, each mile of additional line would have an energy loss equivalent to approximately 26 typical Oregon households.

Under this alternative, this indicates a potential line load loss of power to supply 190 to 400 typical Oregon households for the east-west corridor and 250 to 320 households for the north-south corridor. These estimates assume peak loadings of l,000 megawatts(MW) and 70 percent load factors.

Conclusion: Rerouting of 500-kV north-south and east-west corridors around four WSAs designated as wilderness would add l7.1 to 28.6 miles to the proposed routes, with resultant increases in construction, maintenance and line load energy loss costs.

Impacts on Wood Products Harvest

Timber harvest and harvest of firewood, posts and poles would be precluded by wilderness designation. Table 4-12 indicates the number of acres of available commercial forest land and annual timber yield which would be foregone as a result of wilderness designation. Under this alternative, the average annual timber yield foregone would be 310 thousand board feet (Mbf). Over the long term, designation under this alternative could preclude harvest of an additional average 602 Mbf (annually) should other areas in the WSAs become economically and technically feasible to harvest. The cumulative effects, however, would be insignificant in light of the approximately 8 billion board-foot average annual timber yield in Oregon.

Harvest of firewood, posts and poles would be precluded on 9,820 acres suitable for such harvest. This loss of minor forest products would amount to an estimated 1.2 percent of the total production of such products from BLM woodlands in Oregon. Table 4-13 shows losses of minor forest products in the affected WSAs.

Conclusion: An average annual timber yield of approximately 310 Mbf would be foregone as a result of wilderness designation.

Impacts on Cultural and Paleontological Resources

Cultural resources are and would continue to be managed according to specific laws and regulations covering protection of archeological and historical sites, regardless of wilderness designations. Routine cultural resource management practices (including inventories, data collection, design modifications

Table 4-11. Increased Costs of Alternative Utility Routing to Bypass Designated Wilderness

East-West Electric Transmission Corridor Option[1]

Costs of an added 7.4 miles or 15.9 miles to bypass Alvord Desert and Basque Hills WSAs under alternatives 1 and 2.

	7.4 Miles (US 95 short-cut)		15.9 Miles (east of Bowden Hills)	
	1 Single Circuit 500-kV AC Line	1 Bi-Polar 500-kV DC Line	1 single Circuit 500-kV AC Line	1 Bi-Polar 500-kV DC Line
Construction Cost[2]	$2,836,420	$2,020,200	$6,094,470	$4,340,700
Annual Maintenance Cost[3]	6,512	2,590	13,992	5,565
Annual Energy Loss Cost[4]	103,600	210,900	222,600	453,150
Total Annual Cost	110,112	213,490	236,592	458,715

North-South Electric Transmission Corridor Option[1]

Costs of an additional 9.7 or 12.7 miles to bypass Saddle Butte, Alvord Desert and Bowden Hills WSAs under alternative 1

	9.7 Miles (US 95 short-cut)		12.7 Miles (east of Bowden Hills)	
	1 Single Circuit 500-kV AC Line	1 Bi-Polar 500-kV DC Line	1 Single Circuit 500-kV AC Line	1 Bi-Polar 500-kV DC Line
Construction Cost[2]	$3,718,010	$2,648,100	$4,867,910	$3,467,100
Annual Maintenance Cost[3]	8,536	3,395	11,176	4,445
Annual Energy Loss Cost[4]	135,800	276,450	177,800	361,950
Total Annual Cost	144,336	279,845	188,976	366,395

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[1] BPA August 1985 per mile cost data for preliminary transmission line estimates.
[2] Assumes flat terrain 500-kV lattice tower, single circuit AC at $383,300 per mile; and flat terrain, 500-kV bi-polar DC at $273,000 per mile.
[3] $880 per mile for AC, $350 per mile for DC.
[4] $14,000 per mile for AC; $28,500 per mile for DC. Energy loss estimates assume peak loadings of 1,000 megawatts (MW) for AC and 2,000 MW for DC lines and 70 percent load factors for both kinds of line.

Table 4-12. Short-Term Losses to Commercial Timber Production[1]

		Alt. 1 - All Wld.		Alt. 2 - Wld. Emp.		Alt. 3 - Con. Res.		Alt. 4 - Eco. Div.		Alt. 5 - P.A.		Alt. 6 - Com. Dvl.	
WSA No. (OR-)	WSA Name	Available CFL (Acres)	Annual Yield (Mbf)	Available CFL (Acres)	Annual Yield (Mbf)	Available CFL (Acres)	Annual Yield (Mbf)	Available CFL (Acres)	Annual Yield (Mbf)	Available CFL (Acres)	Annual Yield (Mbf)	Available CFL (Acres)	Annual Yield (Mbf)
2-14	Malheur River-Bluebucket Creek	22	2	22	2	0	0	22	2	0	0	0	0
2-98C	Sheep Gulch	98	7	0	0	0	0	98	7	0	0	0	0
2-103	Aldrich Mountain	1,082	76	1,082	76	0	0	1,082	76	0	0	0	0
5-31	North Fork	66	71	66	71	0	0	66	71	0	0	0	0
11-1	Mountain Lakes[2]	334	94	334	94	334	94	334	94	334	94	334	94
11-17	Soda Mountain[2]	271	60	271	60	0	0	271	60	271	60	271	60
	Totals	1,873	310	1,775	303	334	94	1,873	310	605	154	605	154

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[1] Although Abert Rim (OR-1-101), Pine Creek (OR-2-98A) and Indian Creek (OR-2-98D) WSAs contain commercial forest land (CFL), it is not currently available for timber production, so no short-term losses would occur under any alternative.
[2] The Mountain Lakes (OR-11-1) and Soda Mountain (OR-11-17) WSAs contain some lands recently reclassified as CFL (334 acres and 583 acres, respectively) that are not currently available for timber production. However, consideration of their new classification in the upcoming planning cycle is expected to result in a portion of these CFL areas becoming available in the short term.

CFL = Commercial Forest Land
Mbf = Thousand Board Feet

Table 4-13. Losses of Minor Forest Products

		Acres Lost					
WSA No. (OR-)	WSA Name	Alt. 1 All Wld.	Alt. 2 Wld. Emp.	Alt. 3 Con. Res.	Alt. 4 Eco. Dlv.	Alt. 5 P.A.	Alt. 6 Com. Dvl.
1-22	Four Craters Lava Bed	1,500	1,000	0	1,000	1,000	1,000
1-117	Fish Creek Rim	2,160	2,160	600	600	600	0
5-21	Badlands	6,160	5,969	0	5,969	5,969	0
	Totals	9,820	9,129	600	7,569	7,569	1,000

and/or mitigation and monitoring of construction projects or other activities) would not be affected by wilderness designation under this alternative.

There are approximately 30 WSAs with known cultural sites and six with known paleontological sites. No actions are projected to occur in the vicinity of these cultural and paleontological sites.

Conclusion: No actions are projected to occur in the vicinity of known cultural or paleontological sites.

Impacts on Recreation Use

Overall recreation use of the WSAs would amount to approximately 142,345 visitor days per year, which represents a net increase of 7,045 visitor days per year. Table 4-14 shows the number of WSAs that would experience a net increase, no change, and a net decrease in overall recreation use under this alternative. The total use increases and decreases are shown, leading to the net overall change in recreation use of the WSAs.

A total of 2,608,354 acres, including 1,140 miles of ways, would be closed to motorized vehicle use through wilderness designation. This closure would result in a shift in existing use of the areas to more primitive types of recreation with motorized vehicle use being displaced to other areas outside the WSAs. Construction of 32 miles of roads related to projected mineral development would likely increase vehicle-oriented recreation use while reducing primitive recreation use in the vicinity of the new roads.

Conclusion: Overall recreation use of the WSAs would amount to approximately 142,345 visitor days per year. Annual recreation use would increase by a total of 18,055 visitor days in 22 WSAs and would decrease by a total of 11,010 visitor days in 23 WSAs, with no significant change in use levels anticipated in the remainder of the WSAs.

Impacts on Local Personal Income

Livestock grazing in the WSAs would decrease by 3,328 AUMs, while average annual timber production would be reduced by 310 Mbf. Projected energy and mineral development would amount to four metallic mines and 12 non-metallic mines. Net overall recreation use would increase by 7,045 visitor days per year.

Table 4-15 shows the effects on local personal income generated from these activities. The total effect on local personal income would be a net decrease of $39,086 per year, plus an unknown level of increase attributable to the projected energy and mineral development.

Conclusion: Annual local personal income generated from resource outputs in the WSAs would decrease by approximately $39,000.

Alternative 2: Wilderness Emphasis

Recommended suitable for wilderness: 2,350,142 acres in 74 WSAs (and an additional 43,760 acres of State and private lands if proposed acquisitions are successful).

Recommended nonsuitable for wilderness: 332,865 acres

Table 4-14. Net Effects of the Alternatives on Recreation Use In the WSAs

	Alt. 1 All Wld.		Alt. 2 Wld. Emp.		Alt. 3 Con. Res.		Alt. 4 Eco. Div.		Alt. 5 P.A.		Alt. 6 Com. Dvl.		Alt. 7 No Wld.	
Changes in Net Recreation Use	No. of WSAs	Change In Use (RVD/Yr)	No. of WSAs	Change In Use (RVD/Yr)	No. of WSAs	Change In Use (RVD/Yr)	No. of WSAs	Change In Use (RVD/Yr)	No. of WSAs	Change In Use (RVD/Yr)	No. of WSAs	Change In Use (RVD/Yr)	No. of WSAs	Change In Use (RVD/Yr)
Increase	22	+18,055	18	+ 17,855	21	+24,220	24	+18,120	22	+20,020	22	+19,470	18	+ 17,290
No Change	40	0	42	0	45	0	41	0	45	0	57	0	63	0
Decrease	23	-11,010	25	- 17,480	19	- 4,380	20	-13,450	18	-10,550	6	- 1,650	4	-950
Net Overall Change		+ 7,045		+ 375		+19,840		+4,670		+9,470		+17,820		+16,340

RVD = Recreation Visitor Day

Table 4-15. Effects of Alternatives on Local Personal Income, (1981 price levels)[1]

Item	Unit of Measure	Alt. 1 All Wild.	Alt. 2 Wld. Emp.	Alt. 3 Com. Res.	Alt. 4 Eco. Div.	Alt. 5 P.A.	Alt. 6 Com. Dvl.	Alt. 7 No Wld.
CHANGES IN RESOURCE OUTPUTS								
Livestock Grazing	AUMs	-3,328	+538	+28,382	+35,213	+35,349	+56,019	+56,685
Timber Production	Mbf	-310	-303	-94	-310	-154	-154	0
Energy & Mineral Development:								
Oil & Gas Production Wells	Number	0	+3	+20	+19	+23	+35	+35
Geothermal Powerplants	Number	0	+2	+5	+4	+5	+6	+6
Metallic Mines	Number	+4	+12	+19	+15	+18	+31	+31
Non-Metallic Mines	Number	+12	+15	+18	+18	+18	+26	+26
Recreation Use	RVD	+7,045	+375	+19,840	+4,670	+9,470	+17,820	+16,340
PERSONAL INCOME FROM PROJECTED OUTPUT CHANGES								
Livestock Grazing	$	-39,936	+6,456	+340,584	+422,556	+424,188	+672,228	+680,220
Timber Production	$	-83,700	-81,810	-25,380	-83,700	-41,580	-41,580	0
Energy & Mineral Development:								
Oil & Gas Production Wells	$	0	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Geothermal Powerplants	$	0	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Metallic Mines	$	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Non-Metallic Mines	$	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Recreation Use	$	+84,550	+4,500	+238,080	+56,040	+113,640	+213,840	+196,080
Total	$	**-39,086**	**-70,854**	**+553,284**	**+394,896**	**+496,248**	**+844,488**	**+876,300**

[1] See Addendum 1 for an explanation of how local personal income figures were derived and Table A-1 for the annual income values assigned to each unit of output.

Impacts on Wilderness Values

Wilderness values would be protected on 2,350,142 acres designated as wilderness in 74 WSAs. Acquisition of 43,760 acres of private and state lands and 102,120 acres of mineral estate, and the addition of 30,773 acres of non-WSA public lands to the suitable wilderness recommendation, would ensure preservation of adjoining wilderness values by preventing future incompatible development of these parcels.

Closure of 374 miles of roads and 1,035 miles of ways through wilderness designation would result in restoration of approximately 1,780 acres to a more natural condition as the routes revegetate. Wilderness values would be further enhanced over approximately 219,700 acres through elimination of the visual and noise influences of motorized vehicle use on these routes.

Wilderness designation would also ensure preservation of special wilderness features. Table 4-1 shows the number of areas in which special wilderness features would be protected by wilderness designation under this alternative.

All Bailey-Kuchler ecosystems identified in the study areas would be represented in the NWPS. The alpine meadows and barren ecosystem in the Intermountain Sagebrush Province and the sagebrush steppe ecosystem in the Palouse Grassland Province would be represented for the first time through wilderness designation under this alternative. Table 4-2 identifies the number of WSAs with a given Bailey-Kuchler ecosystem which would be added to the NWPS through wilderness designation.

All but one of the ONHP vegetative communities identified in the WSAs would be added to the NWPS. Those vegetative communities not located within areas recommended suitable for wilderness designation under this alternative would likely remain unrepresented in the national system. Table 4-3 shows the ONHP communities that would be represented in the NWPS under this alternative.

Table 4-4 shows the acres of additional wilderness that would be designated within 5 hours' driving time of major population centers. The addition of 74 wilderness areas under this alternative would better balance the geographic distribution of wilderness areas in the NWPS, since the surrounding region presently contains little wilderness.

A total of 332,865 acres would not be designated as wilderness under this alternative. On these lands, wilderness values of naturalness, solitude, primitive and unconfined recreation, and special features would be subject to the effects of projected management actions, such as energy and mineral development, range and wildlife projects, utility line construction and timber harvest activities. Table 4-5 shows the acres on which wilderness values would be directly affected (i.e., through surface disturbance or vegetative alteration) and indirectly affected (i.e., through visual or noise influence) from the various types of management actions projected under this alternative. These activities are projected to threaten special wilderness features in 6 WSAs. However, monitoring and mitigation measures incorporated in the design of these management actions could avoid or minimize the possibility of impacts to these special features.

Conclusion: Wilderness designation of 2,393,902 acres (assuming acquisition of full fee estate lands totaling 43,760 acres and the addition of 30,773 acres of non-WSA public lands) would protect and enhance existing wilderness values. The additional acquisition of 102,120 acres of mineral estate and closure of 374 miles of roads would further preserve wilderness values. Within the 332,865 acres not designated wilderness, projected activities would both directly and indirectly impair wilderness values over approximately 125,500 acres. Two Bailey-Kuchler ecosystems not currently represented in the NWPS would be added to the system.

Impacts on Energy and Mineral Development

Under this alternative, a total of 2,352,358 acres would be withdrawn from all forms of appropriation, including 102,120 acres of non-Federal mineral estate and 43,760 acres of private land proposed for acquisition. See Tables 4-6 and 4-7 for the acres of each mineral commodity with moderate or high potential for occurrence that would be withdrawn by wilderness designation.

Wilderness designation would withdraw some lands nominated as Areas of Critical Mineral Potential (ACMP), subject to valid existing rights. Lands within ACMPs that would be withdrawn by wilderness designation include 81,967 acres with high potential for the occurrence of oil and gas and 10,984 acres with high potential for the occurrence of gold and mercury.

Projected development of 32 oil and gas production wells, four geothermal powerplants (totaling 60 megawatts), 19 metallic mines, and 11 non-metallic/evaporite mines would be precluded by wilderness designation. Projected development of three oil and gas production wells, two geothermal powerplants (totaling 20 megawatts), 12 metallic mines and 15 non-metallic/evaporite mines would occur.

Conclusion: Withdrawal of 2,352,358 acres to mineral entry from wilderness designation would result in foregone production from 32 projected oil and gas wells, four projected geothermal powerplants (totaling 60 megawatts), and 30 projected mine sites for metallic and non-metallic minerals. Projected development of three oil and gas wells, two geothermal powerplants (totaling 20 megawatts), and 27 metallic and non-metallic mines would occur.

Impacts on Watershed

Of the approximately 540 miles of perennial streams in the WSAs, water quality and quantity would improve, and sedimentation would be reduced, on 116 miles in 13 WSAs due to riparian fence construction, implementation of projected watershed improvements, and closure of roads and ways. A total of 2 miles of perennial streams in one WSA would be degraded through projected mineral development. The condition of the remaining perennial streams would be unchanged.

Conclusion: Watershed conditions would improve on 116 miles of perennial streams and be degraded on 2 miles, with approximately 422 miles of perennial streams remaining in their current condition.

Impacts on Vegetation

Table 4-8 lists acres of vegetation change by particular activities in each of three categories: l) vegetation alteration (due to harvest of timber and minor wood products and to projected vegetation manipulation for livestock grazing and wildlife habitat management); 2) vegetation removal (due to projected energy and mineral development and to construction of utility corridors, and livestock and wildlife facilities); and 3) vegetation addition (natural revegetation resulting from closure of roads and ways). Road construction associated with energy and mineral development and timber harvest is included in the acreage given under those activities. Vegetation alteration would occur on 22,080 acres. Vegetation would be removed from 6,350 acres while natural revegetation would add 1,780 acres.

In addition to the predicted vegetation changes above, the condition of riparian vegetation growing along 129 miles of perennial streams would improve in 17 WSAs due to riparian fence construction and closure of roads and ways. There would be a decline in riparian vegetation along 2 miles of streams due to lack of physical protection from existing and projected resource uses in one WSA. The condition of the remaining 409 miles of riparian vegetation would be unchanged.

Total projected livestock increases of approximately 3,880 AUMs are expected to produce higher utilization and less residual ground cover in eight WSAs. Lower utilization and more residual ground cover than at present are expected in seven WSAs where reductions totaling approximately 3,350 AUMs are projected.

There are 30 WSAs with plant species of special interest. Of these, actions in seven WSAs are projected to occur in the vicinity of habitat of special interest species and could potentially threaten these populations. Where such conflict exists, mitigation measures and monitoring would avoid or minimize impacts to these populations.

Conclusion: Vegetation alteration would occur on 22,080 acres; vegetation would be removed from 6,350 acres, and 1,780 acres would revegetate. Riparian vegetation would improve on 129 miles and would decline on 2 miles of streams. Residual ground cover would decrease in eight WSAs due to livestock use increases and would increase in seven WSAs due to livestock use reductions. Projected actions in seven WSAs would potentially threaten the habitat of plant species of special interest.

Impacts on Wildlife

Wildlife habitat would generally be protected on 2,350,142 acres recommended suitable for wilderness designation under this alternative. Habitat would be altered or reduced on approximately 28,430 acres as a result of projected energy and mineral, livestock, wildlife, timber and utility corridor developments. Table 4-8 lists the acres of vegetation (or habitat) change caused by various activities projected to occur under this alternative.

A total of 16,840 acres of habitat change are a result of the projected implementation of wildlife projects. These projects are designed to improve habitat, and oftentimes, populations of various species of wildlife. Development of water sources benefits most species in the WSAs, while brush control projects tend to benefit primarily big game species, such as deer and antelope. These brush control projects can have a detrimental effect on other species of wildlife, such as sage grouse or small mammals and birds, which depend on brushy areas for nesting and cover. Table 4-9 lists the wildlife improvement projects which would be precluded by wilderness designation under this alternative.

In addition to the habitat changes discussed above, riparian habitat would improve along 129 miles of streams in 17 WSAs as a result of riparian fence construction, implementation of stream channel and wetland projects and other watershed projects, and closure of roads and ways. Riparian habitat condition would decline along 2 miles of streams in one WSA due to projected mineral development. Conditions and trends on the remainder of riparian habitat in WSAs would be unchanged.

Under this alternative, reintroduction of bighorn sheep to their native ranges would occur in 11 WSAs. In addition, stocking of fish, including reintroduction of some native fish species, would occur in streams, reservoirs or lakes within eight WSAs.

Management actions in five WSAs are projected to occur, under this alternative, in the vicinity of known or suspected populations of special status wildlife species (i.e., Federally listed threatened or endangered species, candidates for Federal listing, sensitive wildlife species, or State listed species). However, in accordance with current laws, regulations and policies designed to protect these species, compliance with consultation, mitigation, and monitoring requirements would minimize or avoid impacts to these species.

Conclusion: Wildlife habitat would be protected on 2,350,142 acres designated wilderness. Habitat change or reduction would occur on 28,430 acres. A total of 129 miles of riparian habitat would be improved, while 2 miles would be degraded. Projected actions in five WSAs would potentially threaten habitat or populations of special status species.

Impacts on Livestock Grazing

Of the 153,288 AUMs of currently estimated livestock use in the WSAs, use would increase by 2,766 AUMs in six WSAs due to projects and by 1,118 AUMs in three WSAs through allocation of available, but currently unallocated, forage. A decrease of 3,346 AUMs is projected in seven WSAs as a result of projected energy and mineral developments removing existing forage or from precluded projects that have been proposed to eliminate potential shortages of available forage. Table 4-10 lists all of the projected livestock improvements that would be precluded in WSAs by wilderness designation, including those designed to either improve livestock management, accommodate increased numbers of livestock or eliminate potential shortages of livestock forage.

Closure of a total of 374 miles of roads and 1,035 miles of ways through wilderness designation would result in inconvenience and increased costs to livestock operators where such routes are utilized for day-to-day livestock management and facility inspection. Periodic use of vehicles for major facility maintenance needs or to continue established water hauling would be allowed on a case-by-case basis, where no other means are practical, as projected in the individual appendices.

Conclusion: Livestock would be managed at the estimated overall level of 153,826 AUMs in the WSAs. Current use would increase by 2,766 AUMs in six WSAs from projects and by allocation of 1,118 AUMs currently available in three WSAs. Use would decrease by a total of 3,346 AUMs in seven WSAs.

Impacts on Utility Corridor Routing

Wilderness designation would preclude the creation or expansion of utility corridors within wilderness boundaries. Map 7 displays all of the existing and proposed utility corridors in or near the WSAs. Of the four WSAs identified in the Affected Environment as potential significant obstacles to projected utility corridors, two of them would be designated wilderness where the routes are proposed, affecting only the east-west corridor.

Wilderness designation of the Basque Hills WSA would create an obstacle to the potential east-west utility corridor. This corridor could serve as a regional intertie as well as transmit power from coal-fired generating plants in Montana or Wyoming to the West Coast. There are a variety of other options available to increase east-west transmission capacity including new corridors or additional lines in existing corridors to the north and south.

The alternative corridor location around the Basque Hills WSA is estimated to be 4.4 miles longer than the corridor suggested by utility interests, which is the preferred route in BLM's land use plan.

Designation of the Alvord Desert WSA under this alternative would create an obstacle to the east-west corridor only. If the east-west corridor is relocated to the south of the Alvord Desert WSA, the alternative route is estimated to be 3.0 miles longer than the corridor suggested by utility interests.

The combined alternative routes for the east-west corridor would be an estimated 7.4 miles longer than the industry proposed route.

Under this alternative, the north-south corridor could be located very nearly on the industry proposed route and result in virtually no additional route miles.

Both Pacific Power & Light (PP&L) and Bonneville Power Administration (BPA) have indicated a potential need for the east-west corridor. Both proponents agree that the longer routes would involve higher costs associated with construction, maintenance, and line load energy loss.

Table 4-11 provides estimates of the increased construction costs as well as increased annual maintenance costs for AC and DC lines on the longer routes that would be required for the corridor.

The added cost of annual line load energy loss caused by internal resistance within the powerline itself is also indicated in the table. This power loss can also be expressed in kilowatt hours, which can be translated into power needed to supply typical households in Oregon. Using an average line load loss of 306,600 kilowatt hours/year/mile of single circuit 500 kV AC line, each mile of additional line would have an energy loss equivalent to approximately 26 typical Oregon households.

Under this alternative, this indicates a potential line load loss of power to supply 190 typical Oregon households for the east-west corridor. This estimate assumes peak loadings of l,000 megawatts(MW) and 70 percent load factors.

Conclusion: Rerouting of the projected 500-kV east-west corridor around two WSAs designated as wilderness would add 7.4 miles to the proposed route, with resultant increases in construction, maintenance and line load energy loss costs.

Impacts on Wood Products Harvest

Timber harvest and harvest of firewood, posts and poles would be precluded by wilderness designation. Table 4-12 indicates the number of acres of available commercial forest land and annual timber yield which would be foregone as a result of wilderness designation. Under this alternative, the average annual timber yield foregone would be 303 thousand board feet (Mbf). This impact would be insignificant in light of the approximately 8 billion board-foot average annual timber yield in Oregon. Average annual timber harvest of approximately 7 Mbf would occur in one WSA under this alternative.

Harvest of firewood, posts and poles would be precluded on 9,129 acres suitable for such harvest. This loss of minor forest products would amount to an estimated 1.1 percent of the total production of such products from BLM woodlands in Oregon. Table 4-13 shows losses of minor forest products in the affected WSAs. Harvest of minor forest products would occur on 691 acres.

Conclusion: An average annual timber yield of approximately 303 Mbf would be foregone as a result of wilderness designation. Annual harvest of approximately 7 Mbf in one WSA would be realized.

Impacts on Cultural and Paleontological Resources

Cultural resources are and would continue to be managed according to specific laws and regulations covering protection of archeological and historical sites, regardless of wilderness designations. Routine cultural resource management practices (including inventories, data collection, design modifications and/or mitigation and monitoring of construction projects or other activities) would not be affected by wilderness designation under this alternative.

There are approximately 30 WSAs with known cultural sites and six with known paleontological sites. No actions are projected to occur in the vicinity of these cultural and paleontological sites.

Conclusion: No actions are projected to occur in the vicinity of known cultural or paleontological sites.

Impacts on Recreation Use

Overall recreation use of the WSAs would amount to approximately 135,675 visitor days per year, which represents a net increase of 375 visitor days per year. Table 4-14 shows the number of WSAs that would experience a net increase, no change, and a net decrease in overall recreation use under this alternative. The total use increases and decreases are shown, leading to the net overall change in recreation use of the WSAs.

A total of 2,323,822 acres, including 374 miles of roads and 1,035 miles of ways, would be closed to motorized vehicle use through wilderness designation. This closure would result in a shift in existing use of the areas to more primitive types of recreation with vehicle use being displaced to other areas outside the WSAs. Construction of 90 miles of roads related to projected mineral, timber and utility line development would likely increase vehicle-oriented recreation use while reducing primitive recreation use in the vicinity of the new roads.

Conclusion: Overall recreation use of the WSAs would amount to approximately 135,675 visitor days per year. Annual recreation use would increase by a total of 17,855 visitor days in 18 WSAs and would decrease by a total of 17,480 visitor days in 25 WSAs, with no significant change in use levels anticipated in the remainder of the WSAs.

Impacts on Local Personal Income

Livestock grazing in the WSAs would increase by 538 AUMs, while average annual timber production would be reduced by 303 Mbf. Projected energy and mineral development would amount to three oil and gas production wells, two geothermal powerplants (totaling 20 megawatts), 12 metallic mines, and 15 non-metallic mines. Net overall recreation use would increase by 375 visitor days per year.

Table 4-15 shows the effects on local personal income generated from these activities. The total effect on local personal income would be a net decrease of $70,854 per year, plus an unknown level of increase attributable to the projected energy and mineral development.

Conclusion: Annual local personal income generated from resource outputs in the WSAs would decrease by approximately $71,000.

Alternative 3: Conflict Resolution Emphasis

Recommended suitable for wilderness: 1,242,478 acres in 55 WSAs (and an additional 14,020 acres of State and private lands if proposed acquisitions are successful).

Recommended nonsuitable for wilderness: 1,413,186 acres

Impacts on Wilderness Values

Wilderness values would be protected on 1,242,478 acres designated as wilderness in 55 WSAs. Acquisition of 14,020 acres of private and state lands and 48,755 acres of mineral estate, and the addition of 3,430 acres of non-WSA public lands to the suitable wilderness recommendation, would ensure preservation of adjoining wilderness values by preventing future incompatible development of these parcels.

Closure of 98 miles of roads and 449 miles of ways through wilderness designation would result in restoration of approximately 645 acres to a more natural condition as the routes revegetate. Wilderness values would be further enhanced over approximately 82,500 acres through elimination of the visual and noise influences of motorized vehicle use on these routes.

Wilderness designation would also ensure preservation of special wilderness features. Table 4-1 shows the number of areas in which special wilderness features would be protected by wilderness designation under this alternative.

All Bailey-Kuchler ecosystems identified in the study areas would be represented in the NWPS. The alpine meadows and barren ecosystem in the Intermountain Sagebrush Province and the sagebrush steppe ecosystem in the Palouse Grassland Province would be represented for the first time through wilderness designation under this alternative. Table 4-2 identifies the number of WSAs with a given Bailey-Kuchler ecosystem which would be added to the NWPS through wilderness designation.

All but sixteen of the ONHP vegetative communities identified in the WSAs would be added to the NWPS. Those vegetative communities not located within areas recommended suitable for wilderness designation under this alternative would likely remain unrepresented in the national system. Table 4-3 shows the ONHP communities that would be represented in the NWPS under this alternative.

Table 4-4 shows the acres of additional wilderness that would be designated within 5 hours' driving time of major population centers. The addition of 55 wilderness areas under this alternative would better balance the geographic distribution of wilderness areas in the NWPS, since the surrounding region presently contains little wilderness.

A total of 1,413,186 acres would not be designated as wilderness under this alternative. On these lands, wilderness values of naturalness, solitude, primitive and unconfined recreation, and special features would be subject to the effects of projected management actions, such as energy and mineral development, range and wildlife projects, utility line construction and timber harvest activities. Table 4-5 shows the acres on which wilderness values would be directly affected (i.e., through surface disturbance or vegetative alteration) and indirectly affected (i.e., through visual or noise influence) from the various types of management actions projected under this alternative. These activities are projected to threaten special wilderness features in 21 WSAs. However, monitoring and mitigation measures incorporated in the design of these management actions could avoid or minimize the possibility of impacts to these special features.

Conclusion: Wilderness designation of 1,256,498 acres (assuming acquisition of full fee estate lands totaling 14,020 acres and the addition of 3,430 acres of non-WSA public lands) would protect and enhance existing wilderness values. The additional acquisition of 48,755 acres of mineral estate and closure of 98 miles of roads would further preserve wilderness values. Within the 1,413,186 acres not designated wilderness, projected activities would both directly and indirectly impair wilderness values over approximately 524,000 acres. Two Bailey-Kuchler ecosystems not currently represented in the NWPS would be added to the system.

Impacts on Energy and Mineral Development

Under this alternative, a total of 1,224,544 acres would be withdrawn from all forms of appropriation, including 48,755 acres of non-Federal mineral estate and 14,020 acres of private land proposed for acquisition. See Tables 4-6 and 4-7 for the acres of each mineral commodity with moderate or high potential for occurrence that would be withdrawn by wilderness designation.

Wilderness designation would withdraw some lands nominated as Areas of Critical Mineral Potential (ACMP), subject to valid existing rights. Lands within ACMPs that would be withdrawn by wilderness designation include 40,342 acres with high potential for the occurrence of oil and gas and 8,584 acres with high potential for the occurrence of gold and mercury.

Projected development of 15 oil and gas production wells, one geothermal powerplant (totaling 20 megawatts), 12 metallic mines and eight non-metallic/evaporite mines would be precluded by wilderness designation. Projected development of 20 oil and gas production wells, five geothermal powerplants (totaling 60 megawatts), 19 metallic mines and 18 non-metallic/evaporite mines would occur.

Conclusion: Withdrawal of 1,224,544 acres to mineral entry from wilderness designation would result in foregone production from 15 projected oil and gas wells, one projected geothermal powerplant (totaling 20 megawatts), and 20 projected mine sites for metallic and non-metallic minerals. Projected development of 20 oil and gas wells, five geothermal powerplants (totaling 60 megawatts), and 37 metallic and non-metallic mines would occur.

Impacts on Watershed

Of the approximately 540 miles of perennial streams in the WSAs, water quality and quantity would improve, and sedimentation would be reduced, on 135 miles in 15 WSAs due to riparian fence construction, implementation of projected watershed improvements, and closure of roads and ways. A total of 14 miles of perennial streams in three WSAs would be degraded through projected mineral development. The condition of the remaining perennial streams would be unchanged.

Conclusion: Watershed conditions would improve on 135 miles of perennial streams and be degraded on 14 miles, with approximately 391 miles of perennial streams remaining in their current condition.

Impacts on Vegetation

Table 4-8 lists acres of vegetation change by particular activities in each of three categories: I) vegetation alteration (due to harvest of timber and minor wood products and to projected vegetation manipulation for livestock grazing and wildlife habitat management); 2) vegetation removal (due to projected energy and mineral development and to construction of utility corridors, and livestock and wildlife facilities); and 3) vegetation addition (natural revegetation resulting from closure of roads and ways). Road construction associated with energy and mineral development and timber harvest is included in the acreage given under those activities. Vegetation alteration would occur on 108,870 acres. Vegetation would be removed from 41,620 acres while natural revegetation would occur on 640 acres.

In addition to the predicted vegetation changes above, the condition of riparian vegetation growing along 164 miles of perennial streams would improve in 20 WSAs due to riparian fence construction and closure of roads and ways. There would be a decline in riparian vegetation along 12 miles of streams due to lack of physical protection from existing and projected resource uses in three WSAs. The condition of the remaining 364 miles of riparian vegetation would be unchanged.

Total projected livestock increases of approximately 28,880 AUMs are expected to produce higher utilization and less residual ground cover in 23 WSAs. Lower utilization and more residual ground cover than at present are expected in four WSAs where reductions totaling approximately 490 AUMs are projected.

There are 30 WSAs with plant species of special interest. Of these, actions in eight WSAs are projected to occur in the vicinity of habitat of special interest species and could potentially threaten these populations. Where such conflict exists, mitigation measures and monitoring would avoid or minimize impacts to these populations.

Conclusion: Vegetation alteration would occur on 108,870 acres; vegetation would be removed from 41,620 acres, and 640 acres would revegetate. Riparian vegetation would improve on 164 miles and would decline on 12 miles of streams. Residual ground cover would decrease in 23 WSAs due to livestock use increases and would increase in four WSAs due to livestock use reductions. Projected actions in eight WSAs would potentially threaten the habitat of plant species of special interest.

Impacts on Wildlife

Wildlife habitat would generally be protected on 1,242,478 acres recommended suitable for wilderness designation under this alternative. Habitat would be altered or reduced on approximately 150,490 acres as a result of projected energy and mineral, livestock, wildlife, timber and utility corridor developments. Table 4-8 lists the acres of vegetation (or habitat) change caused by various activities projected to occur under this alternative.

A total of 46,440 acres of habitat change are a result of the projected implementation of wildlife projects. These projects are designed to improve habitat, and oftentimes, populations of various species of wildlife. Development of water sources benefits most species in the WSAs, while brush control projects tend to benefit primarily big game species, such as deer and antelope. These brush control projects can have a detrimental effect on other species of wildlife, such as sage grouse or small mammals and birds, which depend on brushy areas for nesting and cover. Table 4-9 lists the wildlife improvement projects which would be precluded by wilderness designation under this alternative.

In addition to the habitat changes discussed above, riparian habitat would improve along 164 miles of streams in 20 WSAs as a result of riparian fence construction, implementation of stream channel and wetland projects and other watershed projects, and closure of roads and ways. Riparian habitat condition would decline along 12 miles of streams in three WSAs due to projected mineral development. Conditions and trends on the remainder of riparian habitat in WSAs would be unchanged.

Under this alternative, reintroduction of bighorn sheep to their native ranges would occur in 11 WSAs. In addition, stocking of fish, including reintroduction of some native fish species, would occur in streams, reservoirs or lakes within nine WSAs.

Management actions in nine WSAs are projected to occur, under this alternative, in the vicinity of known or suspected populations of special status wildlife species (i.e., Federally listed threatened or endangered species, candidates for Federal listing, sensitive wildlife species, or State listed species). However, in accordance with current laws, regulations and policies designed to protect these species, compliance with consultation, mitigation, and monitoring requirements would minimize or avoid impacts to these species.

Conclusion: Wildlife habitat would be protected on 1,242,478 acres designated wilderness. Habitat change or reduction would occur on 150,490 acres. A total of 164 miles of riparian habitat would be improved, while 12 miles would be degraded. Projected actions in nine WSAs would potentially threaten habitat or populations of special status species.

Impacts on Livestock Grazing

Of the 153,288 AUMs of currently estimated livestock use in the WSAs, use would increase by 15,019 AUMs in 18 WSAs due to projects and by 13,857 AUMs in nine WSAs through allocation of available, but currently unallocated, forage. A decrease of 494 AUMs is projected in four WSAs as a result of projected energy and mineral developments removing existing forage or from precluded projects that have been proposed to eliminate potential shortages of available forage. Table 4-10 lists all of the projected livestock improvements that would be precluded in WSAs by wilderness designation, including those designed to either improve livestock management, accommodate increased numbers of livestock or eliminate potential shortages of livestock forage.

Closure of a total of 98 miles of roads and 449 miles of ways through wilderness designation would result in inconvenience and increased costs to livestock operators where such routes are utilized for day-to-day livestock management and facility inspection. Periodic use of vehicles for major facility maintenance needs or to continue established water hauling would be allowed on a case-by-case basis, where no other means are practical, as projected in the individual appendices.

Conclusion: Livestock would be managed at the estimated overall level of 181,670 AUMs in the WSAs. Current use would increase by 15,019 AUMs in 18 WSAs from projects and by allocation of 13,857 AUMs currently available in nine WSAs. Use would decrease by a total of 494 AUMs in four WSAs.

Impacts on Utility Corridor Routing

None of the four WSAs identified in the Affected Environment as potential significant obstacles to projected utility corridors would be designated as wilderness in the area of the proposed routes under this alternative. Therefore, no substantial shifts in the routes of the proposed 500-kV north-south and east-west utility corridors would occur.

Conclusion: No substantial shifts in the proposed 500-kV utility corridors would occur.

Impacts on Wood Products Harvest

Timber harvest and harvest of firewood, posts and poles would be precluded by wilderness designation. Table 4-12 indicates the number of acres of available commercial forest land and annual timber yield which would be foregone as a result of wilderness designation. Under this alternative, the average annual timber yield foregone would be 94 thousand board feet (Mbf). This impact would be insignificant in light of the approximately 8 billion board-foot average annual timber yield in Oregon. Average annual timber harvest of approximately 216 Mbf would occur in five WSAs under this alternative.

Harvest of firewood, posts and poles would be precluded on 600 acres suitable for such harvest. This loss of minor forest products would amount to an estimated 0.08 percent of the total production of such products from BLM woodlands in Oregon. Table 4-13 shows losses of minor forest products in the affected WSAs. Harvest of minor forest products would occur on 9,220 acres.

Conclusion: An average annual timber yield of approximately 94 Mbf would be foregone as a result of wilderness designation. Annual harvest of approximately 216 Mbf in five WSAs would be realized.

Impacts on Cultural and Paleontological Resources

Cultural resources are and would continue to be managed according to specific laws and regulations covering protection of archeological and historical sites, regardless of wilderness designations. Routine cultural resource management practices (including inventories, data collection, design modifications and/or mitigation and monitoring of construction projects or other activities) would not be affected by wilderness designation under this alternative.

There are approximately 30 WSAs with known cultural sites and six with known paleontological sites. Of these, actions in two WSAs are projected to occur in the vicinity of cultural sites, thereby potentially threatening those sites. However, mitigation and monitoring measures required at the time such actions are implemented would minimize or avoid impacts to these cultural features. No actions are projected to occur in the vicinity of paleontological sites.

Conclusion: Projected actions in two WSAs would potentially threaten known cultural sites. No actions are projected to occur in the vicinity of known paleontological sites.

Impacts on Recreation Use

Overall recreation use of the WSAs would amount to approximately 155,140 visitor days per year, which represents a net increase of 19,840 visitor days per year. Table 4-14 shows the number of WSAs that would experience a net increase, no change, and a net decrease in overall recreation use under this alternative. The total use increases and decreases are shown, leading to the net overall change in recreation use of the WSAs.

A total of 1,223,348 acres, including 98 miles of roads and 449 miles of ways, would be closed to motorized vehicle use through wilderness designation. This closure would result in a shift in existing use of the areas to more primitive types of recreation. Construction of 184 miles of roads related to projected mineral, timber and utility line development would likely increase vehicle-oriented recreation use while reducing primitive recreation use in the vicinity of the new roads.

Conclusion: Overall recreation use of the WSAs would amount to approximately 155,140 visitor days per year. Annual recreation use would increase by a total of 24,220 visitor days in 21 WSAs and would decrease by a total of 4,380 visitor days in 19 WSAs, with no significant change in use levels anticipated in the remainder of the WSAs.

Impacts on Local Personal Income

Livestock grazing in the WSAs would increase by 28,382 AUMs, while average annual timber production would be reduced by 94 Mbf. Projected energy and mineral development would amount to 20 oil and gas production wells, 5 geothermal powerplants (totaling 60 megawatts), 19 metallic mines, and 18 non-metallic mines. Net overall recreation use would increase by 19,840 visitor days per year.

Table 4-15 shows the effects on local personal income generated from these activities. The total effect on local personal income would be a net increase of $553,284 per year, plus an unknown level of increase attributable to the projected energy and mineral development.

Conclusion: Annual local personal income generated from resource outputs in the WSAs would increase by approximately $553,000.

Alternative 4: Ecosystem Diversity Emphasis

Recommended suitable for wilderness: 1,243,999 acres in 58 WSAs (and an additional 9,723 acres of State and private lands if proposed acquisitions are successful)

Recommended nonsuitable for wilderness: 1,414,398 acres

Impacts on Wilderness Values

Wilderness values would be protected on 1,243,999 acres designated as wilderness in 58 WSAs. Acquisition of 9,723 acres of private and state lands and 41,105 acres of mineral estate, and the addition of 6,163 acres of non-WSA public lands to the suitable wilderness recommendation, would ensure preservation of adjoining wilderness values by preventing future incompatible development of these parcels.

Closure of 96 miles of roads and 511 miles of ways through wilderness designation would result in restoration of approximately 703 acres to a more natural condition as the routes revegetate. Wilderness values would be further enhanced over approximately 90,800 acres through elimination of the visual and noise influences of motorized vehicle use on these routes.

Wilderness designation would also ensure preservation of special wilderness features. Table 4-1 shows the number of areas in which special wilderness features would be protected by wilderness designation under this alternative.

All Bailey-Kuchler ecosystems identified in the study areas would be represented in the NWPS. The alpine meadows and barren ecosystem in the Intermountain Sagebrush Province and the sagebrush steppe ecosystem in the Palouse Grassland Province would be represented for the first time through wilderness designation under this alternative. Table 4-2 identifies the number of WSAs with a given Bailey-Kuchler ecosystem which would be added to the NWPS through wilderness designation.

All ONHP vegetative communities identified in the WSAs would be added to the NWPS. Table 4-3 shows the ONHP communities that would be represented in the NWPS under this alternative.

Table 4-4 shows the acres of additional wilderness that would be designated within 5 hours' driving time of major population centers. The addition of 58 wilderness areas under this alternative would better balance the geographic distribution of wilderness areas in the NWPS, since the surrounding region presently contains little wilderness.

A total of 1,414,398 acres would not be designated as wilderness under this alternative. On these lands, wilderness values of naturalness, solitude, primitive and unconfined recreation, and special features would be subject to the effects of projected management actions, such as energy and mineral development, range and wildlife projects, utility line construction and timber harvest activities. Table 4-5 shows the acres on which wilderness values would be directly affected (i.e., through surface disturbance or vegetative alteration) and indirectly affected (i.e., through visual or noise influence) from the various types of management actions projected under this alternative. These activities are projected to threaten special wilderness features in 19 WSAs. However, monitoring and mitigation measures incorporated in the design of these management actions could avoid or minimize the possibility of impacts to these special features.

Conclusion: Wilderness designation of 1,253,722 acres (assuming acquisition of full fee estate lands totaling 9,723 acres and the addition of 6,163 acres of non-WSA public lands) would protect and enhance existing wilderness values. The additional acquisition of 41,105 acres of mineral estate and closure of 96 miles of roads would further preserve wilderness values. Within the 1,414,398 acres not designated wilderness, projected activities would both directly and indirectly impair wilderness values over approximately 481,000 acres. Two Bailey-Kuchler ecosystems not currently represented in the NWPS would be added to the system.

Impacts on Energy and Mineral Development

Under this alternative, a total of 1,216,648 acres would be withdrawn from all forms of appropriation, including 41,105 acres of non-Federal mineral estate and 9,723 acres of private land proposed for acquisition. See Tables 4-6 and 4-7 for the acres of each mineral commodity with moderate or high potential for occurrence that would be withdrawn by wilderness designation.

Wilderness designation would withdraw some lands nominated as Areas of Critical Mineral Potential (ACMP), subject to valid existing rights. Lands within ACMPs that would be withdrawn by wilderness designation include 36,382 acres with high potential for the occurrence of oil and gas and 8,584 acres with high potential for the occurrence of gold and mercury.

Projected development of 16 oil and gas production wells, two geothermal powerplants (totaling 30 megawatts), 16 metallic mines and eight non-metallic/ evaporite mines would be precluded by wilderness designation. Projected development of 19 oil and gas wells, four geothermal powerplants (totaling 50 megawatts), 15 metallic mines and 18 non-metallic/ evaporite mines would occur.

Conclusion: Withdrawal of 1,216,648 acres to mineral entry from wilderness designation would result in foregone production from 16 projected oil and gas wells, two projected geothermal powerplants (totaling 30 megawatts), and 24 projected mine sites for metallic and non-metallic minerals. Projected development of 19 oil and gas wells, four geothermal powerplants (totaling 50 megawatts), and 33 metallic and non-metallic mines would occur.

Impacts on Watershed

Of the approximately 540 miles of perennial streams in the WSAs, water quality and quantity would improve, and sedimentation would be reduced, on 166 miles in 14 WSAs due to riparian fence construction, implementation of projected watershed improvements, and closure of roads and ways. A total of 14 miles of perennial streams in three WSAs would be degraded through projected mineral development. The condition of the remaining perennial streams would be unchanged.

Conclusion: Watershed conditions would improve on 166 miles of perennial streams and be degraded on 14 miles, with approximately 360 miles of perennial streams remaining in their current condition.

Impacts on Vegetation

Table 4-8 lists acres of vegetation change by particular activities in each of three categories: l) vegetation alteration (due to harvest of timber and minor wood products and to projected vegetation manipulation for livestock grazing and wildlife habitat management); 2) vegetation removal (due to projected energy and mineral development and to construction of utility corridors, and livestock and wildlife facilities); and 3) vegetation addition (natural revegetation resulting from closure of roads and ways). Road construction associated with energy and mineral development and timber harvest is included in the acreage given under those activities. Vegetation alteration would occur on 99,890 acres. Vegetation would be removed from 39,340 acres while natural revegetation would occur on 700 acres.

In addition to the predicted vegetation changes above, the condition of riparian vegetation growing along 193 miles of perennial streams would improve in 19 WSAs due to riparian fence construction and closure of roads and ways. There would be a decline in riparian vegetation along 12 miles of streams due to lack of physical protection from existing and projected resource uses in three WSAs. The condition of the remaining 335 miles of riparian vegetation would be unchanged.

Total projected livestock increases of approximately 35,540 AUMs are expected to produce higher utilization and less residual ground cover in 22 WSAs. Lower utilization and more residual ground cover than at present are expected in three WSAs where reductions totaling approximately 320 AUMs are projected.

There are 30 WSAs with plant species of special interest. Of these, actions in eight WSAs are projected to occur in the vicinity of habitat of special interest species and could potentially threaten these populations. Where such conflict exists, mitigation measures and monitoring would avoid or minimize impacts to these populations.

Conclusion: Vegetation alteration would occur on 99,890 acres; vegetation would be removed from 39,340 acres, and 700 acres would revegetate. Riparian vegetation would improve on 193 miles and would decline on 12 miles of streams. Residual ground cover would decrease in 22 WSAs due to livestock use increases and would increase in three WSAs due to livestock use reductions. Projected actions in eight WSAs would potentially threaten the habitat of plant species of special interest.

Impacts on Wildlife

Wildlife habitat would generally be protected on 1,243,999 acres recommended suitable for wilderness designation under this alternative. Habitat would be altered or reduced on approximately 139,230 acres as a result of projected energy and mineral, livestock, wildlife, timber and utility corridor developments. Table 4-8 lists the acres of vegetation (or habitat) change caused by various activities projected to occur under this alternative.

A total of 43,504 acres of habitat change are a result of the projected implementation of wildlife projects. These projects are designed to improve habitat, and oftentimes, populations of various species of wildlife. Development of water sources benefits most species in the WSAs, while brush control projects tend to benefit primarily big game species, such as deer and antelope. These brush control projects can have a detrimental effect on other species of wildlife, such as sage grouse or small mammals and birds, which depend on brushy areas for nesting and cover. Table 4-9 lists the wildlife improvement projects which would be precluded by wilderness designation under this alternative.

In addition to the habitat changes discussed above, riparian habitat would improve along 193 miles of streams in 19 WSAs as a result of riparian fence construction, implementation of stream channel and wetland projects and other watershed projects, and closure of roads and ways. Riparian habitat condition would decline along 12 miles of streams in three WSAs due to projected mineral development. Conditions and trends on the remainder of riparian habitat in WSAs would be unchanged.

Under this alternative, reintroduction of bighorn sheep to their native ranges would occur in 11 WSAs. In addition, stocking of fish, including reintroduction of some native fish species, would occur in streams, reservoirs or lakes within nine WSAs.

Management actions in eight WSAs are projected to occur, under this alternative, in the vicinity of known or suspected populations of special status wildlife species (i.e., Federally listed threatened or endangered species, candidates for Federal listing, sensitive wildlife species, or State listed species). However, in accordance with current laws, regulations and policies designed to protect these species, compliance with consultation, mitigation, and monitoring requirements would minimize or avoid impacts to these species.

Conclusion: Wildlife habitat would be protected on 1,243,999 acres designated wilderness. Habitat change or reduction would occur on 139,230 acres. A total of 193 miles of riparian habitat would be improved, while 12 miles would be degraded. Projected actions in eight WSAs would potentially threaten habitat or populations of special status species.

Impacts on Livestock Grazing

Of the 153,288 AUMs of currently estimated livestock use in the WSAs, use would increase by 15,571 AUMs in 16 WSAs due to projects and by 19,966 AUMs in 11 WSAs through allocation of available, but currently unallocated, forage. A decrease of 324 AUMs is projected in three WSAs as a result of projected energy and mineral developments removing existing forage or from precluded projects that have been proposed to eliminate potential shortages of available forage. Table 4-10 lists all of the projected livestock improvements that would be precluded in WSAs by wilderness designation, including those designed to either improve livestock management, accommodate increased numbers of livestock or eliminate potential shortages of livestock forage.

Closure of a total of 96 miles of roads and 511 miles of ways through wilderness designation would result in inconvenience and increased costs to livestock operators where such routes are utilized for day-to-day livestock management and facility inspection. Periodic use of vehicles for major facility maintenance needs or to continue established water hauling would be allowed on a case-by-case basis, where no other means are practical, as projected in the individual appendices.

Conclusion: Livestock would be managed at the estimated overall level of 188,501 AUMs in the WSAs. Current use would increase by 15,571 AUMs in 16 WSAs from projects and by allocation of 19,966 AUMs currently available in 11 WSAs. Use would decrease by a total of 324 AUMs in three WSAs.

Impacts on Utility Corridor Routing

None of the four WSAs identified in the Affected Environment as potential significant obstacles to projected utility corridors would be designated as wilderness in the area of the proposed routes under this alternative. Therefore, no substantial shifts in the routes of the proposed 500-kV north-south and east-west utility corridors would occur.

Conclusion: No substantial shifts in the proposed 500-kV utility corridors would occur.

Impacts on Wood Products Harvest

Timber harvest and harvest of firewood, posts and poles would be precluded by wilderness designation. Table 4-12 indicates the number of acres of available commercial forest land and annual timber yield which would be foregone as a result of wilderness designation. Under this alternative, the average annual timber yield foregone would be 310 thousand board feet (Mbf). This impact would be insignificant in light of the approximately 8 billion board-foot average annual timber yield in Oregon.

Harvest of firewood, posts and poles would be precluded on 7,569 acres suitable for such harvest. This loss of minor forest products would amount to an estimated 0.9 percent of the total production of such products from BLM woodlands in Oregon. Table 4-13 shows losses of minor forest products in the affected WSAs. Harvest of minor forest products would occur on 2,251 acres.

Conclusion: An average annual timber yield of approximately 310 Mbf would be foregone as a result of wilderness designation.

Impacts on Cultural and Paleontological Resources

Cultural resources are and would continue to be managed according to specific laws and regulations covering protection of archeological and historical sites, regardless of wilderness designations. Routine cultural resource management practices (including inventories, data collection, design modifications and/or mitigation and monitoring of construction projects or other activities) would not be affected by wilderness designation under this alternative.

There are approximately 30 WSAs with known cultural sites and six with known paleontological sites. Of these, actions in two WSAs are projected to occur in the vicinity of cultural sites, thereby potentially threatening those sites. However, mitigation and monitoring measures required at the time such actions are implemented would minimize or avoid impacts to these cultural features. No actions are projected to occur in the vicinity of paleontological sites.

Conclusion: Projected actions in two WSAs would potentially threaten known cultural sites. No actions are projected to occur in the vicinity of known paleontological sites.

Impacts on Recreation Use

Overall recreation use of the WSAs would amount to approximately 139,970 visitor days per year, which represents a net increase of 4,670 visitor days per year. Table 4-14 shows the number of WSAs that would experience a net increase, no change, and a net decrease in overall recreation use under this alternative. The total use increases and decreases are shown, leading to the net overall change in recreation use of the WSAs.

A total of 1,224,289 acres, including 96 miles of roads and 511 miles of ways, would be closed to motorized vehicle use through wilderness designation. This closure would result in a shift in existing use of the areas to more primitive types of recreation. Construction of 162 miles of roads related to projected mineral, timber and utility line development would likely increase vehicle-oriented recreation use while reducing primitive recreation use in the vicinity of the new roads.

Conclusion: Overall recreation use of the WSAs would amount to approximately 139,970 visitor days per year. Annual recreation use would increase by a total of 18,120 visitor days in 24 WSAs and would decrease by a total of 13,450 visitor days in 20 WSAs, with no significant change in use levels anticipated in the remainder of the WSAs.

Impacts on Local Personal Income

Livestock grazing in the WSAs would increase by 35,213 AUMs, while average annual timber production would be reduced by 310 Mbf. Projected energy and mineral development would amount to 19 oil and gas production wells, four geothermal powerplants (totaling 50 megawatts), 15 metallic mines, and 18 non-metallic mines. Net overall recreation use would increase by 4,670 visitor days per year.

Table 4-15 shows the effects on local personal income generated from these activities. The total effect on local personal income would be a net increase of $394,896 per year, plus an unknown level of increase attributable to the projected energy and mineral development.

Conclusion: Annual local personal income generated from resource outputs in the WSAs would increase by approximately $395,000.

Alternative 5: Proposed Action

Recommended suitable for wilderness: 1,128,850 acres in 48 WSAs (and an additional 9,723 acres of State and private lands if proposed acquisitions are successful).

Recommended nonsuitable for wilderness: 1,529,547 acres

Impacts on Wilderness Values

Wilderness values would be protected on 1,128,850 acres designated as wilderness in 48 WSAs. Acquisition of 9,723 acres of private and state lands and 41,105 acres of mineral estate, and the addition of 6,163 acres of non-WSA public lands to the suitable wilderness recommendation, would ensure preservation of adjoining wilderness values by preventing future incompatible development of these parcels.

Closure of 96 miles of roads and 460 miles of ways through wilderness designation would result in restoration of approximately 652 acres to a more natural condition as the routes revegetate. Wilderness values would be further enhanced over approximately 83,700 acres through elimination of the visual and noise influences of motorized vehicle use on these routes.

Wilderness designation would also ensure preservation of special wilderness features. Table 4-1 shows the number of areas in which special wilderness features would be protected by wilderness designation under this alternative.

All Bailey-Kuchler ecosystems identified in the study areas would be represented in the NWPS. The alpine meadows and barren ecosystem in the Intermountain Sagebrush Province and the sagebrush steppe ecosystem in the Palouse Grassland Province would be represented for the first time through wilderness designation under this alternative. Table 4-2 identifies the number of WSAs with a given Bailey-Kuchler ecosystem which would be added to the NWPS through wilderness designation.

All but 18 ONHP vegetative communities identified in the WSAs would be added to the NWPS. Those vegetative communities not located within areas recommended suitable for wilderness designation under this alternative would likely remain unrepresented in the national system. Table 4-3 shows the ONHP communities that would be represented in the NWPS under this alternative.

Table 4-4 shows the acres of additional wilderness that would be designated within 5 hours' driving time of major population centers. The addition of 48 wilderness areas under this alternative would better balance the geographic distribution of wilderness areas in the NWPS, since the surrounding region presently contains little wilderness.

A total of 1,529,547 acres would not be designated as wilderness under this alternative. On these lands, wilderness values of naturalness, solitude, primitive and unconfined recreation, and special features would be subject to the effects of projected management actions, such as energy and mineral development, range and wildlife projects, utility line construction and timber harvest activities. Table 4-5 shows the acres on which wilderness values would be directly affected (i.e., through surface disturbance or vegetative alteration) and indirectly affected (i.e., through visual or noise influence) from the various types of management actions projected under this alternative. These activities are projected to threaten special wilderness features in 22 WSAs. However, monitoring and mitigation measures incorporated in the design of these management actions could avoid or minimize the possibility of impacts to these special features.

Conclusion: Wilderness designation of 1,138,573 acres (assuming acquisition of full fee estate lands totaling 9,723 acres and the addition of 6,163 acres of non-WSA public lands) would protect and enhance existing wilderness values. The additional acquisition of 41,105 acres of mineral estate and closure of 96 miles of roads would further preserve wilderness values. Within the 1,529,547 acres not designated wilderness, projected activities would both directly and indirectly impair wilderness values over approximately 521,400 acres with probable further declines from other unforeseen actions over the long term. Two Bailey-Kuchler ecosystems not currently represented in the NWPS would be added to the system.

Impacts on Energy and Mineral Development

Under this alternative, a total of 1,112,073 acres would be withdrawn from all forms of appropriation, including 41,105 acres of non-Federal mineral estate and 9,723 acres of private land proposed for acquisition. See Tables 4-6 and 4-7 for the acres of each mineral commodity with moderate or high potential for occurrence that would be withdrawn by wilderness designation.

Wilderness designation would withdraw some lands nominated as Areas of Critical Mineral Potential (ACMP), subject to valid existing rights. Lands within ACMPs that would be withdrawn by wilderness designation include 24,512 acres with high potential for the occurrence of oil and gas and 8,584 acres with high potential for the occurrence of gold and mercury.

Projected development of 12 oil and gas production wells, one geothermal powerplant (totaling 20 megawatts), 13 metallic mines and eight non-metallic/evaporite mines would be precluded by wilderness designation. Projected development of 23 oil and gas production wells, five geothermal powerplants (totaling 60 megawatts), 18 metallic mines and 18 non-metallic/evaporite mines would occur.

Conclusion: Withdrawal of 1,112,073 acres to mineral entry from wilderness designation would result in foregone production from 12 projected oil and gas wells, one projected geothermal powerplant (totaling 20 megawatts), and 21 projected mine sites for metallic and non-metallic minerals. Projected development of 23 oil and gas wells, five geothermal powerplants (totaling 60 megawatts), and 36 metallic and non-metallic mines would occur.

Impacts on Watershed

Of the approximately 540 miles of perennial streams in the WSAs, water quality and quantity would improve, and sedimentation would be reduced, on 166 miles in 14 WSAs due to riparian fence construction, implementation of projected watershed improvements, and closure of roads and ways. A total of 14 miles of perennial streams in three WSAs would be degraded through projected mineral development. The condition of the remaining perennial streams would be unchanged.

Conclusion: Watershed conditions would improve on 166 miles of perennial streams and be degraded on 14 miles, with approximately 360 miles of perennial streams remaining in their current condition.

Impacts on Vegetation

Table 4-8 lists acres of vegetation change by particular activities in each of three categories: I) vegetation alteration (due to harvest of timber and minor wood products and to projected vegetation manipulation for livestock grazing and wildlife habitat management); 2) vegetation removal (due to projected energy and mineral development and to construction of utility corridors, and livestock and wildlife facilities); and 3) vegetation addition (natural revegetation resulting from closure of roads and ways). Road construction associated with energy and mineral development and timber harvest is included in the acreage given under those activities. Vegetation alteration would occur on 108,440 acres. Vegetation would be removed from 42,550 acres while natural revegetation would occur on 650 acres.

In addition to the predicted vegetation changes above, the condition of riparian vegetation growing along 193 miles of perennial streams would improve in 19 WSAs due to riparian fence construction and closure of roads and ways. There would be a decline in riparian vegetation along 12 miles of streams due to lack of physical protection from existing and projected resource uses in three WSAs. The condition of the remaining 335 miles of riparian vegetation would be unchanged.

Total projected livestock increases of approximately 35,670 AUMs are expected to produce higher utilization and less residual ground cover in 24 WSAs. Lower utilization and more residual ground cover than at present are expected in three WSAs where reductions totaling approximately 320 AUMs are projected.

There are 30 WSAs with plant species of special interest. Of these, actions in eight WSAs are projected to occur in the vicinity of habitat of special interest species and could potentially threaten these populations. Where such conflict exists, mitigation measures and monitoring would avoid or minimize impacts to these populations.

Conclusion: Vegetation alteration would occur on 108,440 acres; vegetation would be removed from 42,550 acres, and 650 acres would revegetate. Riparian vegetation would improve on 193 miles and would decline on 12 miles of streams. Residual ground cover would decrease in 24 WSAs due to livestock use increases and would increase in three WSAs due to livestock use reductions. Projected actions in eight WSAs would potentially threaten the habitat of plant species of special interest.

Impacts on Wildlife

Wildlife habitat would generally be protected on 1,128,850 acres recommended suitable for wilderness designation under this alternative. Habitat would be altered or reduced on approximately 150,990 acres as a result of projected energy and mineral, livestock, wildlife, timber and utility corridor developments. Table 4-8 lists the acres of vegetation (or habitat) change caused by various activities projected to occur under this alternative.

A total of 53,504 acres of habitat change are a result of the projected implementation of wildlife projects. These projects are designed to improve habitat, and oftentimes, populations of various species of wildlife. Development of water sources benefits most species in the WSAs, while brush control projects tend to benefit primarily big game species, such as deer and antelope. These brush control projects can have a detrimental effect on other species of wildlife, such as sage grouse or small mammals and birds, which depend on brushy areas for nesting and cover. Table 4-9 lists the wildlife improvement projects which would be precluded by wilderness designation under this alternative.

In addition to the habitat changes discussed above, riparian habitat would improve along 193 miles of streams in 19 WSAs as a result of riparian fence construction, implementation of stream channel and wetland projects and other watershed projects, and closure of roads and ways. Riparian habitat condition would decline along 12 miles of streams in three

WSAs due to projected mineral development. Conditions and trends on the remainder of riparian habitat in WSAs would be unchanged.

Under this alternative, reintroduction of bighorn sheep to their native ranges would occur in 11 WSAs. In addition, stocking of fish, including reintroduction of some native fish species, would occur in streams, reservoirs or lakes within nine WSAs.

Management actions in nine WSAs are projected to occur, under this alternative, in the vicinity of known or suspected populations of special status wildlife species (i.e., Federally listed threatened or endangered species, candidates for Federal listing, sensitive wildlife species, or State listed species). However, in accordance with current laws, regulations and policies designed to protect these species, compliance with consultation, mitigation, and monitoring requirements would minimize or avoid impacts to these species.

Conclusion: Wildlife habitat would be protected on 1,128,850 acres designated wilderness. Habitat change or reduction would occur on 150,990 acres. A total of 193 miles of riparian habitat would be improved, while 12 miles would be degraded. Projected actions in nine WSAs would potentially threaten habitat or populations of special status species.

Impacts on Livestock Grazing

Of the 153,288 AUMs of currently estimated livestock use in the WSAs, use would increase by 15,707 AUMs in 18 WSAs due to projects and by 19,966 AUMs in 11 WSAs through allocation of available, but currently unallocated, forage. A decrease of 324 AUMs is projected in three WSAs as a result of projected energy and mineral developments removing existing forage or from precluded projects that have been proposed to eliminate potential shortages of available forage. Table 4-10 lists all of the projected livestock improvements that would be precluded in WSAs by wilderness designation, including those designed to either improve livestock management, accommodate increased numbers of livestock or eliminate potential shortages of livestock forage.

Closure of a total of 96 miles of roads and 460 miles of ways through wilderness designation would result in inconvenience and increased costs to livestock operators where such routes are utilized for day-to-day livestock management and facility inspection. Periodic use of vehicles for major facility maintenance needs or to continue established water hauling would be allowed on a case-by-case basis, where no other means are practical, as projected in the individual appendices.

Conclusion: Livestock would be managed at the estimated overall level of 188,637 AUMs in the WSAs. Current use would increase by 15,707 AUMs in 18 WSAs from projects and by allocation of 19,966 AUMs currently available in 11 WSAs. Use would decrease by a total of 324 AUMs in three WSAs.

Impacts on Utility Corridor Routing

None of the four WSAs identified in the Affected Environment as potential significant obstacles to projected utility corridors would be designated as wilderness in the area of the proposed routes under this alternative. Therefore, no substantial shifts in the routes of the proposed 500-kV north-south and east-west utility corridors would occur.

Conclusion: No substantial shifts in the proposed 500-kV utility corridors would occur.

Impacts on Wood Products Harvest

Timber harvest and harvest of firewood, posts and poles would be precluded by wilderness designation. Table 4-12 indicates the number of acres of available commercial forest land and annual timber yield which would be foregone as a result of wilderness designation. Under this alternative, the average annual timber yield foregone would be 154 thousand board feet (Mbf). This impact would be insignificant in light of the approximately 8 billion board-foot average annual timber yield in Oregon. Average annual timber harvest of approximately 156 Mbf would occur in four WSAs under this alternative.

Harvest of firewood, posts and poles would be precluded on 7,569 acres suitable for such harvest. This loss of minor forest products would amount to an estimated 0.9 percent of the total production of such products from BLM woodlands in Oregon. Table 4-13 shows losses of minor forest products in the affected WSAs. Harvest of minor forest products would occur on 2,251 acres.

Conclusion: An average annual timber yield of approximately 154 Mbf would be foregone as a result of wilderness designation. Annual harvest of approximately 156 Mbf in four WSAs would be realized.

Impacts on Cultural and Paleontological Resources

Cultural resources are and would continue to be managed according to specific laws and regulations covering protection of archeological and historical sites, regardless of wilderness designations. Routine cultural resource management practices (including inventories, data collection, design modifications and/ or mitigation and monitoring of construction projects or other activities) would not be affected by wilderness designation under this alternative.

There are approximately 30 WSAs with known cultural sites and six with known paleontological sites. Of these, actions in two WSAs are projected to occur in the vicinity of cultural sites, thereby potentially threatening those sites. However, mitigation and monitoring measures required at the time such actions are implemented would minimize or avoid impacts to these cultural features. No actions are projected to occur in the vicinity of paleontological sites.

Conclusion: Projected actions in two WSAs would potentially threaten known cultural sites. No actions are projected to occur in the vicinity of known paleontological sites.

Impacts on Recreation Use

Overall recreation use of the WSAs would amount to approximately 144,770 visitor days per year, which represents a net increase of 9,470 visitor days per year. Table 4-14 shows the number of WSAs that would experience a net increase, no change, and a net decrease in overall recreation use under this alternative. The total use increases and decreases are shown, leading to the net overall change in recreation use of the WSAs.

A total of 1,116,220 acres, including 96 miles of roads and 460 miles of ways, would be closed to motorized vehicle use through wilderness designation. This closure would result in a shift in existing use of the areas to more primitive types of recreation. Construction of 192 miles of roads related to projected mineral, timber and utility line development would likely increase vehicle-oriented recreation use while reducing primitive recreation use in the vicinity of the new roads.

Conclusion: Overall recreation use of the WSAs would amount to approximately 144,770 visitor days per year. Annual recreation use would increase by a total of 20,020 visitor days in 22 WSAs and would decrease by a total of 10,550 visitor days in 18 WSAs, with no significant change in use levels anticipated in the remainder of the WSAs.

Impacts on Local Personal Income

Livestock grazing in the WSAs would increase by 35,349 AUMs, while average annual timber production would be reduced by 154 Mbf. Projected energy and mineral development would amount to 23 oil and gas production wells, five geothermal powerplants (totaling 60 megawatts), 18 metallic mines, and 18 non-metallic mines. Net overall recreation use would increase by 9,470 visitor days per year.

Table 4-15 shows the effects on local personal income generated from these activities. The total effect on local personal income would be a net increase of $496,248 per year, plus an unknown level of increase attributable to the projected energy and mineral development.

Conclusion: Annual local personal income generated from resource outputs in the WSAs would increase by approximately $496,000.

Alternative 6: Commodity Development Emphasis

Recommended suitable for wilderness: 381,413 acres in 26 WSAs (and an additional 800 acres of State and private lands if proposed acquisitions are successful).

Recommended nonsuitable for wilderness: 2,273,321 acres

Impacts on Wilderness Values

Wilderness values would be protected on 381,413 acres designated as wilderness in 26 WSAs. Acquisition of 800 acres of private and state lands and 12,785 acres of mineral estate, and the addition of 2,500 acres of non-WSA public lands to the suitable wilderness recommendation, would ensure preservation of adjoining wilderness values by preventing future incompatible development of these parcels.

Closure of 26 miles of roads and 96 miles of ways through wilderness designation would result in restoration of approximately 148 acres to a more natural condition as the routes revegetate. Wilderness values would be further enhanced over approximately 18,600 acres through elimination of the visual and noise influences of motorized vehicle use on these routes.

Wilderness designation would also ensure preservation of special wilderness features. Table 4-1 shows the number of areas in which special wilderness features would be protected by wilderness designation under this alternative.

All Bailey-Kuchler ecosystems identified in the study areas would be represented in the NWPS. The alpine meadows and barren ecosystem in the Intermountain Sagebrush Province and the sagebrush steppe ecosystem in the Palouse Grassland Province would be represented for the first time through wilderness designation under this alternative. Table 4-2 identifies the number of WSAs with a given Bailey-Kuchler ecosystem which would be added to the NWPS through wilderness designation.

All but 27 ONHP vegetative communities identified in the WSAs would be added to the NWPS. Those vegetative communities not located within areas recommended suitable for wilderness designation under this alternative would likely remain unrepresented in the national system. Table 4-3 shows the ONHP communities that would be represented in the NWPS under this alternative.

Table 4-4 shows the acres of additional wilderness that would be designated within 5 hours' driving time of major population centers. The addition of 26 wilderness areas under this alternative would better balance the geographic distribution of wilderness areas in the NWPS, since the surrounding region presently contains little wilderness.

A total of 2,273,321 acres would not be designated as wilderness under this alternative. On these lands, wilderness values of naturalness, solitude, primitive and unconfined recreation, and special features would be subject to the effects of projected management actions, such as energy and mineral development, range and wildlife projects, utility line construction and timber harvest activities. Table 4-5 shows the acres on which wilderness values would be directly affected (i.e., through surface disturbance or vegetative alteration) and indirectly affected (i.e., through visual or noise influence) from the various types of management actions projected under this alternative. These activities are projected to threaten special wilderness features in 32 WSAs. However, monitoring and mitigation measures incorporated in the design of these management actions could avoid or minimize the possibility of impacts to these special features.

Conclusion: Wilderness designation of 382,213 acres (assuming acquisition of full fee estate lands totaling 800 acres and the addition of 2,500 acres of non-WSA public lands) would protect and enhance existing wilderness values. The additional acquisition of 12,785 acres of mineral estate and closure of 26 miles of roads would further preserve wilderness values. Within the 2,273,321 acres not designated wilderness, projected activities would both directly and indirectly impair wilderness values over approximately 745,300 acres with probable further declines from other unforeseen actions over the long term. Two Bailey-Kuchler ecosystems not currently represented in the NWPS would be added to the system.

Impacts on Energy and Mineral Development

Under this alternative, a total of 375,733 acres would be withdrawn from all forms of appropriation, including 12,785 acres of non-Federal mineral estate and 800 acres of private land proposed for acquisition. See Tables 4-6 and 4-7 for the acres of each mineral commodity with moderate or high potential for occurrence that would be withdrawn by wilderness designation.

No lands within ACMPs would be withdrawn by wilderness designation under this alternative.

No projected energy and mineral development would be precluded by wilderness designation. Projected development of 35 oil and gas production wells, six geothermal powerplants (totaling 80 megawatts), 31 metallic mines and 26 non-metallic/evaporite mines would occur.

Conclusion: Withdrawal of 375,733 acres to mineral entry from wilderness designation is projected to result in no foregone energy and mineral production. Projected development of all 35 oil and gas wells, six geothermal powerplants (totaling 80 megawatts), and 57 metallic and non-metallic mines would occur.

Impacts on Watershed

Of the approximately 540 miles of perennial streams in the WSAs, water quality and quantity would improve, and sedimentation would be reduced, on 165 miles in 14 WSAs due to riparian fence construction, implementation of projected watershed improvements, and closure of roads and ways. A total of 72 miles of perennial streams in nine WSAs would be degraded through projected mineral, livestock, and utility corridor developments. The condition of the remaining perennial streams would be unchanged.

Conclusion: Watershed conditions would improve on 165 miles of perennial streams and be degraded on 72 miles, with approximately 303 miles of perennial streams remaining in their current condition.

Impacts on Vegetation

Table 4-8 lists acres of vegetation change by particular activities in each of three categories: l) vegetation alteration (due to harvest of timber and minor wood products and to projected vegetation manipulation for livestock grazing and wildlife habitat management); 2) vegetation removal (due to projected energy and mineral development and to construction of utility corridors, and livestock and wildlife facilities); and 3) vegetation addition (natural revegetation resulting from closure of roads and ways). Road construction associated with energy and mineral development and timber harvest is included in the acreage given under those activities. Vegetation alteration would occur on 150,680 acres. Vegetation would be removed from 46,460 acres while natural revegetation would occur on 150 acres.

In addition to the predicted vegetation changes above, the condition of riparian vegetation growing along 189 miles of perennial streams would improve in 19 WSAs due to riparian fence construction and closure of roads and ways. There would be a decline in riparian vegetation along 92 miles of streams due to lack of physical protection from existing and projected resource uses in 10 WSAs. The condition of the remaining 259 miles of riparian vegetation would be unchanged.

Total projected livestock increases of approximately 56,370 AUMs are expected to produce higher utilization and less residual ground cover in 30 WSAs. Lower utilization and more residual ground cover than at present are expected in four WSAs where reductions totaling approximately 350 AUMs are projected.

There are 30 WSAs with plant species of special interest. Of these, actions in nine WSAs are projected to occur in the vicinity of habitat of special interest species and could potentially threaten these populations. Where such conflict exists, mitigation measures and monitoring would avoid or minimize impacts to these populations.

Conclusion: Vegetation alteration would occur on 150,680 acres; vegetation would be removed from 46,460 acres, and 150 acres would revegetate. Riparian vegetation would improve on 189 miles and would decline on 92 miles of streams. Residual ground cover would decrease in 30 WSAs due to livestock use increases and would increase in four WSAs due to livestock use reductions. Projected actions in nine WSAs would potentially threaten the habitat of plant species of special interest.

Impacts on Wildlife

Wildlife habitat would generally be protected on 381,413 acres recommended suitable for wilderness designation under this alternative. Habitat would be altered or reduced on approximately 197,140 acres as a result of projected energy and mineral, livestock, wildlife, timber and utility corridor developments. Table 4-8 lists the acres of vegetation (or habitat) change caused by various activities projected to occur under this alternative.

A total of 70,954 acres of habitat change are a result of the projected implementation of wildlife projects. These projects are designed to improve habitat, and oftentimes, populations of various species of wildlife. Development of water sources benefits most species in the WSAs, while brush control projects tend to benefit primarily big game species, such as deer and antelope. These brush control projects can have a detrimental effect on other species of wildlife, such as sage grouse or small mammals and birds, which depend on brushy areas for nesting and cover. Table 4-9 lists the wildlife improvement projects which would be precluded by wilderness designation under this alternative.

In addition to the habitat changes discussed above, riparian habitat would improve along 189 miles of streams in 19 WSAs as a result of riparian fence construction, implementation of stream channel and wetland projects and other watershed projects, and closure of roads and ways. Riparian habitat condition would decline along 92 miles of streams in 10 WSAs due to projected mineral, livestock and utility corridor developments. Conditions and trends on the remainder of riparian habitat in WSAs would be unchanged.

Under this alternative, reintroduction of bighorn sheep to their native ranges would occur in 11 WSAs. In addition, stocking of fish, including reintroduction of some native fish species, would occur in streams, reservoirs or lakes within nine WSAs.

Management actions in 15 WSAs are projected to occur, under this alternative, in the vicinity of known or suspected populations of special status wildlife species (i.e., Federally listed threatened or endangered species, candidates for Federal listing, sensitive wildlife species, or State listed species). However, in accordance with current laws, regulations and policies designed to protect these species, compliance with consultation, mitigation, and monitoring requirements would minimize or avoid impacts to these species.

Conclusion: Wildlife habitat would be protected on 381,413 acres designated wilderness. Habitat change or reduction would occur on 197,140 acres. A total of 189 miles of riparian habitat would be improved, while 92 miles would be degraded. Projected actions in 15 WSAs would potentially threaten habitat or populations of special status species.

Impacts on Livestock Grazing

Of the 153,288 AUMs of currently estimated livestock use in the WSAs, use would increase by 18,127 AUMs in 23 WSAs due to projects and by 38,246 AUMs in 16 WSAs through allocation of available, but currently unallocated, forage. A decrease of 354 AUMs is projected in four WSAs as a result of projected energy and mineral developments removing existing forage or from precluded projects that have been proposed to eliminate potential shortages of available forage. Table 4-10 lists all of the projected livestock improvements that would be precluded in WSAs by wilderness designation, including those designed to either improve livestock management, accommodate increased numbers of livestock or eliminate potential shortages of livestock forage.

Closure of a total of 26 miles of roads and 96 miles of ways through wilderness designation would result in inconvenience and increased costs to livestock operators where such routes are utilized for day-to-day livestock management and facility inspection. Periodic use of vehicles for major facility maintenance needs or to continue established water hauling would be allowed on a case-by-case basis, where no other means are practical, as projected in the individual appendices.

Conclusion: Livestock would be managed at the estimated overall level of 209,307 AUMs in the WSAs. Current use would increase by 18,127 AUMs in 23 WSAs from projects and by allocation of 38,246 AUMs currently available in 16 WSAs. Use would decrease by a total of 354 AUMs in four WSAs.

Impacts on Utility Corridor Routing

None of the four WSAs identified in the Affected Environment as potential significant obstacles to projected utility corridors would be designated as wilderness in the area of the proposed routes under this alternative. Therefore, no substantial shifts in the routes of the proposed 500 kV north-south and east-west utility corridors would occur.

Conclusion: No substantial shifts in the proposed 500 kV utility corridors would occur.

Impacts on Wood Products Harvest

Timber harvest and harvest of firewood, posts and poles would be precluded by wilderness designation. Table 4-12 indicates the number of acres of available commercial forest land and annual timber yield which would be foregone as a result of wilderness designation. Under this alternative, the average annual timber yield foregone would be 154 thousand board feet (Mbf). This impact would be insignificant in light of the approximately 8 billion board-foot average annual timber yield in Oregon. Average annual timber harvest of approximately 156 Mbf would occur in four WSAs under this alternative.

Harvest of firewood, posts and poles would be precluded on 1,000 acres suitable for such harvest. This loss of minor forest products would amount to an estimated 0.1 percent of the total production of such products from BLM woodlands in Oregon. Table 4-13 shows losses of minor forest products in the affected WSAs. Harvest of minor forest products would occur on 8,820 acres.

Conclusion: An average annual timber yield of approximately 154 Mbf would be foregone as a result of wilderness designation. Annual harvest of approximately 156 Mbf in four WSAs would be realized.

Impacts on Cultural and Paleontological Resources

Cultural resources are and would continue to be managed according to specific laws and regulations covering protection of archeological and historical sites, regardless of wilderness designations. Routine cultural resource management practices (including inventories, data collection, design modifications and/or mitigation and monitoring of construction projects or other activities) would not be affected by wilderness designation under this alternative.

There are approximately 30 WSAs with known cultural sites and six with known paleontological sites. Of these, actions in eight WSAs are projected to occur in the vicinity of cultural sites, thereby potentially threatening those sites. However, mitigation and monitoring measures required at the time such actions are implemented would minimize or avoid impacts to these cultural features. No actions are projected to occur in the vicinity of paleontological sites.

Conclusion: Projected actions in eight WSAs would potentially threaten known cultural sites. No actions are projected to occur in the vicinity of known paleontological sites.

Impacts on Recreation Use

Overall recreation use of the WSAs would amount to approximately 153,120 visitor days per year, which represents a net increase of 17,820 visitor days per year. Table 4-14 shows the number of WSAs that would experience a net increase, no change, and a net decrease in overall recreation use under this alternative. The total use increases and decreases are shown, leading to the net overall change in recreation use of the WSAs.

A total of 360,403 acres, including 26 miles of roads and 96 miles of ways, would be closed to motorized vehicle use through wilderness designation. This closure would result in a shift in existing use of the areas to more primitive types of recreation. Construction of 268 miles of roads related to projected mineral, timber and utility line development would likely increase vehicle-oriented recreation use while reducing primitive recreation use in the vicinity of the new roads.

Conclusion: Overall recreation use of the WSAs would amount to approximately 153,120 visitor days per year. Annual recreation use would increase by a total of 19,470 visitor days in 22 WSAs and would decrease by a total of 1,650 visitor days in six WSAs, with no significant change in use levels anticipated in the remainder of the WSAs.

Impacts on Local Personal Income

Livestock grazing in the WSAs would increase by 56,019 AUMs, while average annual timber production would be reduced by 154 Mbf. Projected energy and mineral development would amount to 35 oil and gas production wells, 6 geothermal powerplants (totaling 80 megawatts), 31 metallic mines, and 26 non-metallic mines. Net overall recreation use would increase by 17,820 visitor days per year.

Table 4-15 shows the effects on local personal income generated from these activities. The total effect on local personal income would be a net increase of $844,488 per year, plus an unknown level of increase attributable to the projected energy and mineral development.

Conclusion: Annual local personal income generated from resource outputs in the WSAs would increase by approximately $844,000.

Alternative 7: No Wilderness/ No Action

Recommended suitable for wilderness: 0 acres

Recommended nonsuitable for wilderness: 2,652,234 acres

Impacts on Wilderness Values

All but two Bailey-Kuchler ecosystems identified in the study areas are currently represented in the NWPS. The alpine meadows and barren ecosystem in the Intermountain Sagebrush Province and the sagebrush steppe ecosystem in the Palouse Grassland Province would remain unrepresented in the NWPS, as they are not recommended suitable for wilderness under this alternative.

None of the 81 ONHP vegetative communities identified in the WSAs would be added to the NWPS and would likely remain unrepresented in the national system.

A total of 2,652,234 acres would not be designated as wilderness under this alternative. On these lands, wilderness values of naturalness, solitude, primitive and unconfined recreation, and special features would be subject to the effects of projected management actions, such as energy and mineral development, range and wildlife projects, utility line construction and timber harvest activities. Table 4-5 shows the acres on which wilderness values would be directly affected (i.e., through surface disturbance or vegetative alteration) and indirectly affected (i.e., through visual or noise influence) from the various types of management actions projected under this alternative. These activities are projected to threaten special wilderness features in 33 WSAs. However, monitoring and mitigation measures incorporated in the design of these management actions could avoid or minimize the possibility of impacts to these special features.

Conclusion: Within the 2,652,234 acres not designated wilderness, projected activities would both directly and indirectly impair wilderness values over approximately 783,700 acres with further declines from other unforeseen actions over the long term. Two Bailey-Kuchler ecosystems would remain unrepresented in the NWPS.

Impacts on Energy and Mineral Development

Under this alternative, all of the study areas would remain open to energy and mineral exploration and development, except for approximately 154,000 acres that are currently closed to energy and mineral entry through existing land use plans or legislation.

No lands within ACMPs would be withdrawn by wilderness designation under this alternative.

Projected development of 35 oil and gas production wells, 6 geothermal powerplants (totaling 80 megawatts), 31 metallic mines and 26 non-metallic/evaporite mines would occur in the study areas.

Conclusion: Projected development of all 35 oil and gas wells, six geothermal powerplants (totaling 80 megawatts), and 57 metallic and non-metallic mines would occur.

Impacts on Watershed

Of the approximately 540 miles of perennial streams in the WSAs, water quality and quantity would improve, and sedimentation would be reduced, on 180 miles in 16 WSAs due to riparian fence construction. The fences are designed to protect sensitive riparian areas from livestock grazing and associated streambank trampling. A total of 75 miles of perennial streams in 11 WSAs would be degraded through projected mineral, livestock, timber and utility corridor developments. These developments involve surface disturbance and vegetation removal in areas within or near drainages where resultant erosion would add sediment to streams. The condition of the remaining perennial streams would be unchanged.

Conclusion: Watershed conditions would improve on 180 miles of perennial streams and be degraded on 75 miles, with approximately 285 miles of perennial streams remaining in their current condition.

Impacts on Vegetation

Table 4-8 lists acres of vegetation change by particular activities in each of two categories: l) vegetation alteration (due to harvest of timber and minor wood products and to projected vegetation manipulation for livestock grazing and wildlife habitat management); and 2) vegetation removal (due to projected energy and mineral development and to construction of utility corridors, and livestock and wildlife facilities). Road construction associated with energy and mineral development and timber harvest is included in the acreage given under those activities. Vegetation alteration would occur on 165,120 acres. Vegetation would be removed from 52,540 acres. No vegetation addition is expected.

In addition to the predicted vegetation changes above, the condition of riparian vegetation growing along 191 miles of perennial streams would improve in 20 WSAs due to riparian fence construction and other watershed or wildlife projects. There would be a decline in riparian vegetation along 92 miles of streams due to lack of physical protection from existing and projected resource uses in 10 WSAs. The condition of the remaining 257 miles of riparian vegetation would be unchanged.

Total projected livestock increases of approximately 57,040 AUMs are expected to produce higher utilization and less residual ground cover in 32 WSAs. Lower utilization and more residual ground cover than at present are expected in four WSAs where reductions totaling approximately 350 AUMs are projected.

There are 30 WSAs with plant species of special interest. Of these, actions in eight WSAs are projected to occur in the vicinity of habitat of special interest species and could potentially threaten these populations. Where such conflict exists, mitigation measures and monitoring would avoid or minimize impacts to these populations.

Conclusion: Vegetation alteration would occur on 165,120 acres and vegetation would be removed from 52,540 acres. Riparian vegetation would improve on 191 miles and would decline on 92 miles of streams. Residual ground cover would decrease in 32 WSAs due to livestock use increases and would increase in four WSAs due to livestock use reductions. Projected actions in eight WSAs would potentially threaten the habitat of plant species of special interest.

Impacts on Wildlife

Wildlife habitat would be altered or reduced on approximately 217,660 acres as a result of projected energy and mineral, livestock, wildlife, timber and utility corridor developments. Table 4-8 lists the acres of vegetation (or habitat) change caused by various activities projected to occur under this alternative.

A total of 84,774 acres of habitat change are a result of the projected implementation of wildlife projects. These projects are designed to improve habitat, and oftentimes, populations of various species of wildlife. Development of water sources benefits most species in the WSAs, while brush control projects tend to benefit primarily big game species, such as deer and antelope. These brush control projects can have a detrimental effect on other species of wildlife, such as sage grouse or small mammals and birds, which depend on brushy areas for nesting and cover. Table

4-9 lists the wildlife improvement projects which would be precluded by wilderness designation under this alternative.

In addition to the habitat changes discussed above, riparian habitat would improve along 191 miles of streams in 20 WSAs as a result of riparian fence construction and implementation of stream channel and wetland projects and other watershed projects. Riparian habitat condition would decline along 92 miles of streams in 11 WSAs due to projected activities, such as mineral development, livestock developments or timber harvest. Conditions and trends on the remainder of riparian habitat in WSAs would be unchanged.

Under this alternative, reintroduction of bighorn sheep to their native ranges would occur in 11 WSAs. In addition, stocking of fish, including reintroduction of some native fish species, would occur in streams, reservoirs or lakes within nine WSAs.

Management actions in 15 WSAs are projected to occur, under this alternative, in the vicinity of known or suspected populations of special status wildlife species (i.e., Federally listed threatened or endangered species, candidates for Federal listing, sensitive wildlife species, or State listed species). However, in accordance with current laws, regulations and policies designed to protect these species, compliance with consultation, mitigation, and monitoring requirements would minimize or avoid impacts to these species.

Conclusion: Habitat change or reduction would occur on 217,660 acres. A total of 191 miles of riparian habitat would be improved, while 92 miles would be degraded. Projected actions in 15 WSAs would potentially threaten habitat or populations of special status species.

Impacts on Livestock Grazing

Of the 153,288 AUMs of currently estimated livestock use in the WSAs, use would increase by 18,793 AUMs in 25 WSAs due to projects and by 38,246 AUMs in 16 WSAs through allocation of available, but currently unallocated, forage. A decrease of 354 AUMs is projected in four WSAs as a result of projected energy and mineral developments removing existing forage.

Conclusion: Livestock would be managed at the estimated overall level of 209,973 AUMs in the WSAs. Current use would increase by 18,793 AUMs in 25 WSAs from projects and by allocation of 38,246 AUMs currently available in 16 WSAs. Use would decrease by a total of 354 AUMs in four WSAs.

Impacts on Utility Corridor Routing

As no areas would be designated as wilderness under this alternative, no substantial shifts in the routes of the proposed 500-kV north-south and east-west utility corridors would occur.

Conclusion: No substantial shifts in the proposed 500-kV utility corridors would occur.

Impacts on Wood Products Harvest

Average annual timber harvest of approximately 310 Mbf would occur in six WSAs under this alternative.

Harvest of minor forest products would occur on 9,820 acres.

Conclusion: Annual harvest of approximately 310 Mbf in six WSAs would be realized.

Impacts on Cultural and Paleontological Resources

Cultural resources are and would continue to be managed according to specific laws and regulations covering protection of archeological and historical sites. Routine cultural resource management practices (including inventories, data collection, design modifications and/or mitigation and monitoring of construction projects or other activities) would not be affected under this alternative.

There are approximately 30 WSAs with known cultural sites and six with known paleontological sites. Of these, actions in eight WSAs are projected to occur in the vicinity of cultural sites, thereby potentially threatening those sites. However, mitigation and monitoring measures required at the time such actions are implemented would minimize or avoid impacts to these cultural features. No actions are projected to occur in the vicinity of paleontological sites.

Conclusion: Projected actions in eight WSAs would potentially threaten known cultural sites. No actions are projected to occur in the vicinity of known paleontological sites.

Impacts on Recreation Use

Overall recreation use of the WSAs would amount to approximately 151,640 visitor days per year, which represents a net increase of 16,340 visitor days per year. Table 4-14 shows the number of WSAs that would experience a net increase, no change, and a net decrease in overall recreation use under this alternative. The total use increases and decreases are shown, leading to the net overall change in recreation use of the WSAs.

Construction of 309 miles of roads related to projected mineral, timber and utility line development would likely increase vehicle-oriented recreation use while reducing primitive recreation use in the vicinity of the new roads.

Conclusion: Overall recreation use of the WSAs would amount to approximately 151,640 visitor days per year. Annual recreation use would increase by a total of 17,290 visitor days in 18 WSAs and would decrease by a total of 950 visitor days in four WSAs, with no significant change in use levels anticipated in the remainder of the WSAs.

Impacts on Local Personal Income

Livestock grazing in the WSAs would increase by 56,685 AUMs, while average annual timber production would be unaffected. Projected energy and mineral development would amount to 35 oil and gas production wells, 6 geothermal powerplants (totaling 80 megawatts), 31 metallic mines, and 26 non-metallic mines. Net overall recreation use would increase by 16,340 visitor days per year.

Table 4-15 shows the effects on local personal income generated from these activities. The total effect on local personal income would be a net increase of $876,300 per year, plus an unknown level of increase attributable to the projected energy and mineral development.

Conclusion: Annual local personal income generated from resource outputs in the WSAs would increase by approximately $876,000.

Unavoidable Adverse Impacts of the Proposed Action

Under the Proposed Action, wilderness designation of 1,128,850 acres in 48 WSAs would result in foregone production from 12 projected oil and gas wells, one 20-megawatt geothermal powerplant, 13 metallic mines and eight non-metallic/evaporite mines. In addition, livestock grazing would be reduced by 324 AUMs in three WSAs and projected increases of 21,366 AUMs would be foregone. There would be some increase in livestock management costs as a result of closing 460 miles of ways and 96 miles of roads. Vehicle use would be precluded on 1,116,220 acres due to wilderness designation, reducing opportunities for recreationists who prefer motorized recreation. Timber harvest of an average annual volume of 154 thousand board feet would be foregone.

On the 1,529,547 acres not designated as wilderness, projected energy and mineral, range, wildlife, timber and utility corridor development would lead to unavoidable adverse impacts to wilderness values as a result of approximately 45,000 acres of surface disturbance and vegetative alteration that would visually influence an additional 476,000 acres.

Relationship Between Short-Term Uses and the Maintenance and Enhancement of Long-Term Productivity

Under the Proposed Action, the long-term productivity of wilderness values would be preserved on the 1,128,850 acres designated wilderness.

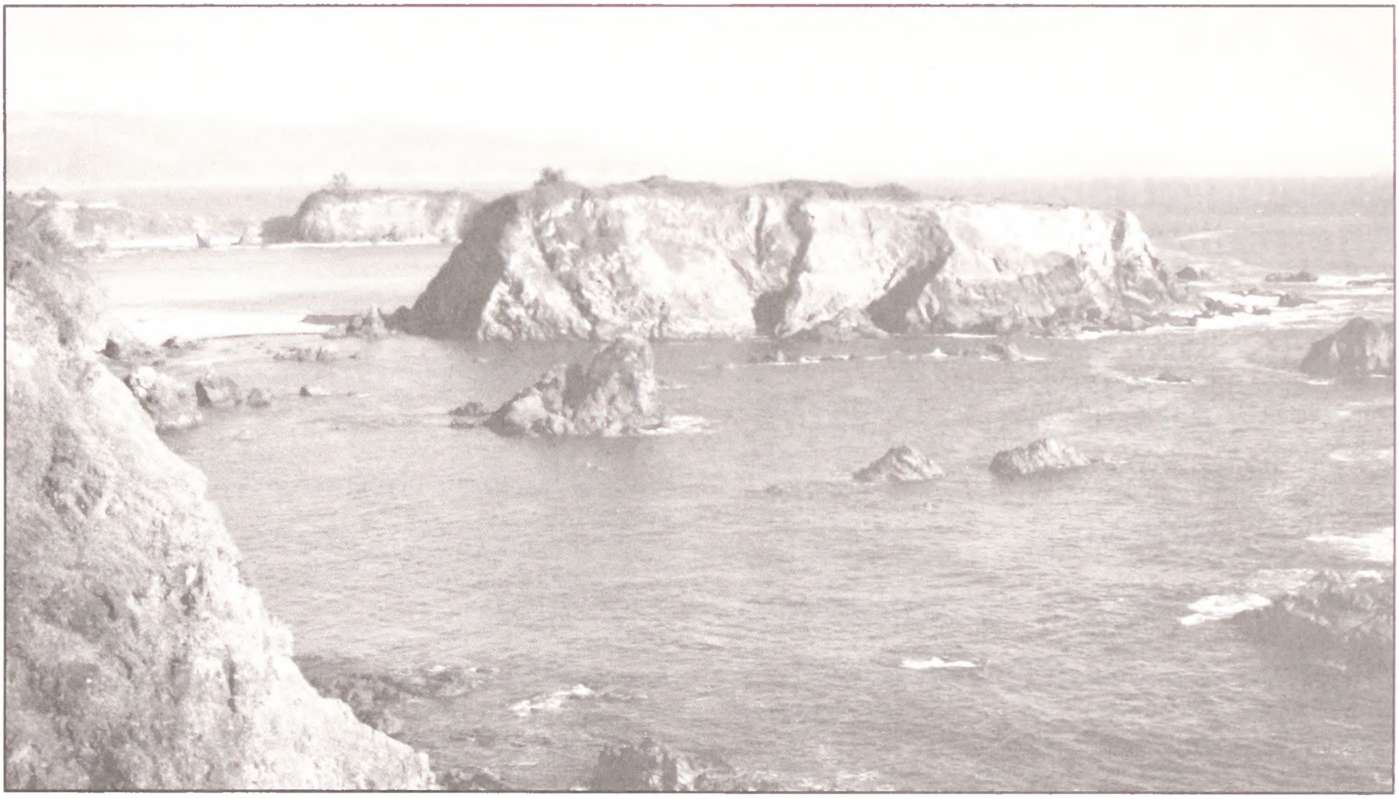
On the 1,529,547 acres not designated as wilderness, all short-term uses would continue and future development options, including projected energy and mineral exploration and development and implementation of range and wildlife projects and timber and utility corridor developments, would remain open. The long-term productivity of wilderness values would be directly lost on approximately 45,000 acres from these projected developments, and the associated changes to naturalness and the visual character of the landscape would influence an additional 476,000 acres, with further declines in wilderness productivity from other potential uses over the long term.

Irreversible and Irretrievable Commitments of Resources

Under the Proposed Action, projected energy and mineral development would result in an irreversible commitment of the wilderness resource on approximately 6,000 acres, from direct surface disturbance, as well as an irretrievable commitment of the energy and mineral resources. Livestock, wildlife, timber harvest and utility corridor development activities would directly reduce wilderness values by an additional 39,000 acres.

Although designation of 1,128,850 acres as wilderness by Congress constitutes a long-term commitment of resources, such designation is neither irreversible nor irretrievable.

Chapter 5
Consultation and Coordination



Zwagg Island WSA (OR-12-14)

Public Involvement

The inventory/planning process leading to publication of the draft EIS and Supplement has included numerous opportunities for public involvement. Several public meetings were held throughout Oregon soliciting public input on the various stages of the original wilderness inventory (from draft initial inventory to final intensive inventory), which began in 1978 and was completed in 1981. BLM held 25 public meetings to discuss alternatives considered in the MFP and MFP amendment efforts which included the WSAs in this EIS. These efforts were completed in 1982 and 1983.

Solicitation of public input for the statewide wilderness EIS began on December 2, 1982, with publication in the Federal Register of a Notice of Intent to prepare the EIS and conduct scoping meetings. Public meetings were held in ten eastern Oregon towns and four towns and cities in western Oregon. Over 400 people attended the meetings, and many persons also submitted written comments. The following section summarizes the results of the scoping meetings held throughout Oregon in preparation of the draft EIS as well as the scoping input received in preparation of the Supplement. A 120-day comment period on the draft EIS included 15 public hearings held throughout Oregon and in Boise, Idaho and Reno, Nevada. A Notice of Intent to prepare the Supplement to the draft EIS, which invited scoping input to the Supplement, was published in the Federal Register on February 28, 1986. A 90-day comment period on the Supplement included nine public hearings held throughout Oregon and in Boise, Idaho.

Scoping of Issues and Alternatives

This section discusses the issues raised and alternatives developed during the scoping process, including those issues and alternatives not addressed or analyzed in the EIS and the reasons for not addressing or analyzing them.

Issues Analyzed

Issues analyzed in the EIS are:

Wilderness System Diversity

Need to consider:

- cataloging of each WSA according to a botanical and ecological classification system;
- use of a more refined ecological classification system than the Bailey-Kuchler (a system used in BLM wilderness studies nationwide);
- use of the Oregon Natural Heritage Plan as a model to refine ecological classification and/or as a yardstick for statewide alternatives; and
- the uniqueness of each WSA.

Ecosystems and Vegetation

Need to consider effects of the proposed action and alternatives on:

- ecological systems;
- vegetative composition;
- plant species of special interest;
- watershed values; and
- incidence of fires.

Also need to consider:

- impact of fire as a management tool under each alternative; and
- use of fire in WSAs as a tool to reach desired ecological stage.

Economics

Need to consider:

- cost of renting or using horses instead of vehicles in wilderness areas;
- the amount wilderness values would have to be in order to offset economic losses;
- positive as well as negative economic aspects of wilderness designation;
- local economic impact;
- national economic benefit; and
- documenting economic assumptions.

Commercial Uses

Need to consider effects of the proposed action and alternatives on:

- range improvement projects and livestock grazing programs;
- mineral and energy development;
- powerline and road corridors; and
- timber production.

Also need to consider:

- alternative sources outside WSAs of commodity values (minerals, etc.) found in WSAs.

Recreation

Need to consider effects of proposed action and alternatives on:

- recreation visitor use (fishing, hunting, other); and
- recreation experience.

Also need to consider:

- quality hunting experiences in wilderness areas; and
- whether BLM would put in restrooms and build roads if areas were designated wilderness.

Adjacent Lands

Need to consider effects of proposed action and alternatives on:

- state and privately-owned lands or mineral estates within WSAs (inholdings); and
- adjacent land ownership, including effects on adjacent private lands and other federal lands (including existing wilderness areas) of developments, ORV (off-road vehicle) use, etc., within WSAs, if WSAs not designated wilderness; and the effects of designation on trespass on private lands.

Also need to consider:

- redefining extremely irregular boundaries;
- the impact of increased use or pressure on adjacent private lands and public lands by wildlife and hunting as a result of wilderness designation, especially in parts of the state with many wilderness study areas;
- how wilderness designation would affect access to adjacent lands with mineral values;
- how wilderness designation would affect land exchanges with private landowners and the State; and
- acquisition of inholdings by exchange, and cost of acquisition.

Wildlife

Need to consider effects of proposed action and alternatives on:

- wildlife habitat and populations; and
- threatened or endangered wildlife species.

Also need to consider:

- reintroduction of wildlife species to various WSAs;
- whether wilderness designation would inhibit wildlife benefiting projects, including riparian fencing;
- effect of increased grazing in WSAs on wildlife, including big game species;
- to what extent wildlife habitat improvements would be allowed in critical deer winter range; and
- whether predator control would be allowed in wilderness areas to prevent special and serious losses to native wildlife species.

Other

Need to consider effects of proposed action and alternatives on:

- future options.

Also need to consider:

- consistency of proposed action and alternatives with other federal plans;
- conformity of proposed action and alternatives to Oregon Recreation Trails plan;
- mapping all ways in the EIS;
- documenting rationale for each proposed action in each WSA;
- documenting manageability problems used as decision criteria;
- documenting outside sights and sounds, fire management, wildlife management, etc., used as decision to eliminate from wilderness;
- comparing all alternatives against one another and to the current situation and projected situation;
- avoiding cross references to other documents - put pertinent material in wilderness EIS;
- whether cattle grazing conflicts with wilderness use and, if so, what aspects of grazing;
- what wilderness values would be impaired if areas not designated wilderness;
- value of de facto wilderness for both wilderness characteristics and supplemental values;
- how wilderness quality can be justified;
- to what extent designation would restrict use of motor vehicles for a variety of purposes;
- how wilderness designation would affect cultural sites; and
- how wilderness designation would protect resource values.

Issues Not Analyzed

The following “issues” raised by the public during the scoping process are not directly addressed in the EIS. The following discussion responds to some of the issues and cites reasons for not addressing these and other issues in the impact analysis:

- the total cost of wilderness studies. This issue is not affected by the proposed action or alternatives and is not an environmental consequence.
- benefit/cost ratios of proposed range developments. These ratios were not developed for the FEIS, since livestock development projections beyond the expected life of existing plans left no accurate basis from which to compute the elements of benefit and cost. Additionally, consideration of B/C ratios is a decision, rather than an environmental analysis, factor.
- effect on future American character and literature. These effects are not environmental consequences.
- effect on research. Research activities are allowed under wilderness designation as well as outside of wilderness areas. Although there would be some minor constraints within wilderness areas, no significant impacts are expected on research opportunities under any alternative.
- impacts of current levels of livestock use on natural values in WSAs. Current livestock use is considered part of the existing environment and not an environmental consequence relative to the proposed action and alternatives.
- effects of the proposed action and alternatives on spiritual, psychological and mental health values. These values are inherent in people's minds, not in the wilderness study areas or their natural resources. Any effects of the alternatives on these values are not environmental consequences.
- fire history, frequency of natural fires for each area. The fire history of an area would be discussed in an EIS only if it were relevant to analysis of impacts of the alternative. This is rarely the case.
- potential for restoration to "original state." Our current inventory of soil classification and ecological potential is only adequate for us to infer the "original" state on some WSAs. In some locations the original state persists. For the remainder we do know generally that, to restore that state, we would have to modify livestock grazing and let wildfires return. It might not, however, always be possible to restore enough vegetative cover to carry fires. This potential is addressed, indirectly, in discussion of the impacts on vegetation in each WSA appendix.
- effectiveness of controlled burning to simulate natural conditions in a wilderness area. See comments above.
- human carrying capacity of each WSA. There are no established formulas for calculating the human carrying capacity for wilderness areas where recreational use is not practically limited to established trails. The carrying capacity issue can be addressed for only a few specific WSAs and in a broad sense.
- ratio of recreation users per square mile. Accurate recreation use figures do not exist for most WSAs, and visitor use of the WSAs is not evenly distributed.
- thorough description of existing situation or condition of what is on the ground now (wildlife, water, threatened and endangered species, etc.). An EIS is not supposed to be encyclopedic. The existing situation will be described thoroughly enough so that all significant impacts of the alternatives can be understood.
- map of existing situation for all significant resources found in each WSA. The cost of preparing and printing such maps is considered unwarranted, as they would add little to understanding of the significant impacts. Working maps portraying the situation for many resource values are maintained in the BLM district offices managing the lands and are available for review in those offices.
- cost of mitigation for threatened and endangered species if areas are not designated as wilderness and development is allowed. Development that would adversely affect federally-listed threatened and endangered species would not be permitted as such species are protected under the Endangered Species Act of 1973.
- declining federal funds available for managing federal land including wilderness. This issue is beyond the scope of this EIS, which addresses possible wilderness designation of less than 10 percent of the federal land in one state.
- possibility of seasonal closures to ORV use where hunting access conflicts with big game management objectives and/or where ORV use is considered harassment on winter ranges or during stress periods for the animals. The EIS cannot address ways of managing undesignated WSAs differently than the management set forth in the no wilderness/no action alternative. Such an analysis is beyond the scope of this EIS which addresses only wilderness designation alternatives to the existing land use plans, and use projections under these plans, for the WSAs.
- assessment of demand for wilderness, grazing, minerals and other resources as a price-quantity relationship. Sound data for such an assessment, which would require a determination of the marginal value of such resources, do not generally exist. Meaningful marginal value analysis would have to relate to the site-specific attributes of the resource, such as quality and accessibility. The cost of such an analysis for each resource for each WSA is not warranted.
- effect of horses (pack and saddle) fed on grains and/or hay introducing non-natural or native plants into ecosystem. Since recreational horseback use in some WSAs may increase due to wilderness designation, there may also be an increased likelihood of introducing non-native vegetation (including noxious weeds) through hay brought in from other areas. The overall increase in recreational use of horses in these

areas as a result of wilderness designation, however, is expected to be slight. Thus, the impacts of such introduction of non-native vegetation would be minor, compared to those impacts that would occur if the areas were not designated wilderness.

- list of amounts (percentage of area) in each vegetative community (Oregon Natural Heritage Plan) in each WSA. BLM's inventory data was not consistently collected according to Natural Heritage Plan categories.
- parts of WSAs in a "virgin" condition and percent of WSA acreage. BLM's inventory data do not allow a definitive conclusion, particularly since there is no consensus on what vegetative condition constitutes "virgin" condition.
- buffering. The BLM Wilderness Management Policy (September 1981) states that "No buffer zones will be created around wilderness areas to protect them from the influence of activities on adjacent land." On the other hand, the influence of anticipated activities on adjacent land has been a consideration in the design of boundaries for some alternatives.
- effect of not using motorized vehicles for emergency search and rescue (e.g., downed planes). The BLM Wilderness Management Policy states that motorized equipment and mechanical transport may be allowed when an emergency condition exists which involves health and safety.
- effect of proposed livestock improvements and the resulting changes in livestock use on wilderness values and the quality of the native vegetation. No objective measure of quality of native vegetation exists, and opinions vary with perspective. The discussion in Chapter 4, Environmental Consequences, Wilderness Values, however, addresses this issue from one perspective.
- effect of wilderness designation on the management of wild horses. For example, will aircraft use be allowed for it? Will costs of wild horse management increase? Wild horses would continue to be managed under a herd management plan accommodating horse habitat requirements and other resource needs, and providing for periodic gathering. Aircraft use may be allowed on a case-by-case basis with BLM State Director approval. Some increased cost of management would be likely, due to the need to remove panels at horse traps between gatherings and the need to restore roads and ways used in the gatherings. The magnitude of such cost increase is uncertain.
- criteria that would be used in determining whether or not to allow reintroduction of bighorn sheep in a WSA. The Oregon Department of Fish and Wildlife uses biological criteria in determining its proposals. BLM's criteria are identified in Wilderness Management Policy and involve weighing the benefits of reintroduction against any anticipated conflicts.
- effect of wilderness designation on fish treatments (i.e., rotenone). Fish treatments would be allowed in wilderness if it were determined that such treatment would assist restoration of natural conditions.
- whether sufficient habitat would be provided for threatened and endangered species to restore them to non-threatened levels. It is unlikely that any of the alternatives would accomplish this. Restoration (officially known as recovery) typically requires more complex actions than mere preservation of habitat, because habitat is only one of many factors affecting species viability.
- percent of state or National population that uses wilderness. National forest wilderness/primitive areas received slightly more than three million recreation visits in 1975. Since the number of visitors would be less, because many people make a number of trips each year, it appears that approximately one percent of the United States population visited national forest wilderness areas in 1975. Oregon national forest wilderness areas received approximately 310,200 visitor days (124,000 visits) in 1975. Although the actual number of Oregonians visiting national forest wilderness areas cannot be determined, since many people make several trips annually and use figures do not differentiate between states of residence, the information does indicate that an equivalent of 5 percent of Oregon's population visited the state's national forest wilderness areas in 1975.
- categories of people who use wilderness areas. No studies have been undertaken to categorize the potential users of BLM wilderness areas.
- whether more public physical and legal access should be provided to these WSAs. Public physical and legal access is considered adequate in most of the WSAs. In the very few where access is limited, the pertinent appendices address this point. However, the question of whether more access should be provided is considered irrelevant to analyzing impacts of wilderness designation versus nondesignation.
- the potential impact of road closures on the transportation network in the vicinity of merged WSAs. None of the roads proposed for closing provide sole access to non-federal lands or are essential to general use and management. In addition, no significant adverse impacts are expected on point-to-point travel. In most cases the roads that might be closed are in rugged country, are poor quality, local access roads, and are not connecting routes for travelers. In each case, alternate connecting routes of higher quality are available in the local areas.
- access for the elderly and disabled. Prohibitions on the use of motorized vehicles would generally limit access to those persons capable of relatively strenuous activity. An exception would be elderly and disabled visitors on river float trips in wilderness areas through which the Owyhee River and John Day River

extend (i.e., Owyhee Breaks, OR-3-59; Lower Owyhee Canyon, OR-3-110; Thirtymile, OR-5-1; Lower John Day, OR-5-6; and North Pole Ridge OR-5-8).

- cost of management and development under each alternative. The costs of proposed range and wildlife developments can be derived with reasonable confidence, based on substantial BLM experience with the installation and maintenance of similar improvements. But there is some uncertainty whether many of these proposed improvements would be developed if the areas were designated wilderness. It is clear that wilderness designation would increase the costs of some management activities (e.g., requiring horses for use supervision and for other management, boundary signing, patrols for enforcement). There is inadequate information, however, from which to estimate the added cost of wilderness management for scattered blocks of grassland and desert. Thus, comparison of alternatives in this regard would have little value.
- federal cash flow under alternatives. This issue is neither an environmental consequence nor a relevant decision factor.
- benefits to private and public sectors separately. An attempt to sort benefits in this manner would entail tenuous assumptions as to which benefits are private and which are public. All economic benefits are to some degree both private and public. The clearer dichotomy which has been addressed is that between local and national benefits.
- economic value of hunting and fishing. Personal income generated by the expenditures of hunters and anglers in destination areas was estimated and used in developing a dollar value per recreation visitor day.
- social effects of wilderness designation related to distribution of economic gains and losses within the local population. Because the total area involved in this wilderness study represents only 17 percent of public lands in Oregon and 0.04 percent of all lands in Oregon, social impacts related to economic gains and losses within the local population are expected to be insignificant. Significance to communities in closer proximity to the WSAs was evaluated by comparing the projected changes in local personal income under each alternative to the total personal income of the 11-county area in central and eastern Oregon that would primarily be affected by wilderness decisions. Such a comparison results in potential impacts ranging from a reduction of 0.003 percent of the areas' total income or employment under the All Wilderness alternative to an increase of 0.06 percent under the No Wilderness/No Action alternative. The Proposed Action would result in an increase of 0.03 percent. This is not to say that direct economic gains or losses to specific individuals would be insignificant; rather that the net social impacts on the community would be minor.
- effect of wilderness designation on owners of non-federal inholdings, including mineral estate. BLM's wilderness management policy allows reasonable access to all non-federal inholdings, including mineral estates, within designated wilderness areas, so there would be no direct impacts on inholdings or their owners. Potential impacts could eventually occur from social pressure on the non-Federal owners to manage their lands consistent with management of the surrounding wilderness. A possible outcome would be for landowners to exchange the inholdings with BLM for lands outside wilderness areas. Although some inholdings could conceivably have some crucial significance to the owner's livelihood, the probability of this situation would be extremely difficult to measure. However, past experience has shown that these exchanges are usually of mutual benefit.
- keeping vehicles out of wilderness. In most areas, signing, informational programs or natural barriers would prevent the illegal use of vehicles from becoming a serious problem. Areas which have been used by many recreational off-road vehicle drivers in the past, such as the Sand Dunes WSA (OR-1-24) in BLM's Lakeview District and the playa in the west end of Alvord Desert WSA (OR-2-74) in the Burns District, might be exceptions. Those areas probably would not be manageable as wilderness because of the difficulty in excluding vehicles.
- manageability of areas with split-estate inholdings (federally managed surface, state or privately owned mineral rights) and state or privately owned surface as wilderness. Many existing wilderness areas have inholdings, which have not precluded management of the areas as wilderness. Inholdings could complicate management of some of the WSAs as wilderness, but in all but one of the areas, the potential problems would not be significant. Inholdings probably would present a serious management problem in the Mahogany Ridge WSA (OR-2-77) in the Burns District. The primary feature of the WSA is the Trout Creek drainage, and most of the land along the creek is privately owned.
- possibility of unacceptable uses of wilderness threatening public safety, such as growing of marijuana. It is possible that a wilderness area could be used for an illegal activity. However, because all remote areas are subject to such activities, it is unlikely that wilderness designation would have any effect on these activities. Law enforcement authorities can be authorized to use vehicles in wilderness areas to pursue fugitives or eliminate illegal activities.
- enforceability of wilderness. Potential problems with the use of recreational off-road vehicles in two WSAs and the use of private inholdings in a third are described above. With the possible exception of those areas, the areas would be manageable as wilderness.
- managing the unfamiliar or unprepared wilderness

users who get lost or injured. Wilderness designation is not expected to cause a significant increase in recreation use in any of the areas; therefore, there would be little or no change in the number of people requiring aid or rescue. Motorized vehicles, including aircraft, may be used in emergencies involving health or safety of visitors.

- effect of designation on litter and vandalism. Because wilderness designation is projected to cause little increase, if any, in recreation use over the long term (see Recreation Use section, Chapter 4), vandalism and litter would not noticeably increase. Vandalism and litter would decrease along vehicle routes closed by the designation, but would probably increase on the alternative routes used outside the designated area.

Formulation of Alternatives

Appendices

BLM initially suggested that the appendices address the following alternatives for each WSA:

- All Wilderness
- No Wilderness/No Action
- Enhanced Wilderness (manageability-oriented).
- Partial (resource conflict-oriented)
- The BLM Preferred Alternative or "Proposed Action" (may be one of the four preceding alternatives or may differ from all of them)

People who commented during the scoping process accepted these alternatives as an appropriate range to consider for each WSA. For some WSAs, the enhanced wilderness and/or the partial alternatives are not analyzed because the environmental effects would not be substantially different from the other alternatives analyzed.

Statewide

At public scoping meetings BLM initially suggested that a minimum number of appropriate alternatives be:

- The BLM Preferred Alternative (Proposed Action)
- All Wilderness
- No Wilderness
- Enhanced Wilderness
- Partial

Subsequent scoping, both within BLM and through public contacts and meetings, led to the following statewide alternatives for analysis in the EIS:

- All Wilderness
- Wilderness Emphasis
- Conflict Resolution Emphasis
- Ecosystem Diversity Emphasis
- BLM Proposed Action (Preferred Alternative)
- Commodity Development Emphasis
- No Wilderness/No Action

These alternatives are described in Chapter 2, Description of Alternatives Including the Proposed Action.

The no wilderness alternative is the no action alternative, since the management of each WSA, in the absence of wilderness designation, will follow existing management plans as projected out over approximately 50 years. The two alternatives are, therefore, combined as one and the same.

The statewide alternatives incorporate all alternatives developed for the individual WSAs in the appendices. Other approaches to aggregating the WSA-specific enhanced wilderness and partial alternatives were considered, but were discarded, as they were arbitrary and not as related to an alternative design objective as those indicated above. Because there are innumerable possibilities of alternative combinations, the alternatives above were developed to provide a full range of possibilities, from all wilderness to no wilderness. (These alternatives are further defined in Chapter 2.)

The following alternatives proposed by the public either duplicate the selected alternatives or are not analyzed for other reasons as noted:

- No Wilderness but Special Management of Supplementary Values (e.g., recreation, wildlife, rare plants). It is beyond the scope of this EIS to address management options for the no wilderness/no action alternative other than that currently planned. To do otherwise would be to use the Wilderness EIS to reopen the entire land use decision process for all lands in the WSAs.
- Focus on Protection of Supplemental Values. This proposed alternative would use the presence of supplemental values such as threatened and endangered species to determine which portions of WSAs would be recommended for wilderness. Since such supplemental values will be protected without wilderness designation, the impacts on supplemental values would be the same as the no wilderness/no action alternative.

- Full Ecosystem. This alternative would promote natural values, such as wildlife habitat diversity, over the largest land area. It would be the same as the all wilderness alternative.
- Maximize Cash Flow to Government. Such an alternative would require relying on untested assumptions about the cost of managing wilderness areas in sagebrush and grassland. This alternative would be interesting but would not address any major environmental objective.
- Postpone Wilderness Decision on Areas Lacking Sufficient Data, Until Further Planning. This proposed alternative assumes that BLM has substantially different degrees of data on its WSAs. Because of BLM's systematic wilderness inventory process, BLM believes this is not the case. Furthermore, the long-term impacts of a no-decision alternative are essentially unanalyzable and therefore cannot be compared meaningfully to other EIS alternatives.
- A Partial Alternative Designating All Areas Without Cost-Efficient Multiple Use Conflicts. The partial alternative for individual WSAs expressly excludes from wilderness only those proposed BLM-sponsored projects that have at least a 1:1 benefit/cost ratio, or that provide supplemental benefits to unquantifiable (in economic terms) resources, such as wildlife or water quality, which justify their cost. Exclusion of areas with mineral values was also a concern embraced in this proposal, but the mineral values are so speculative that no meaningful cost-efficiency test can be devised for such an alternative. The conflict resolution emphasis alternative approaches the objective suggested by this alternative.
- Maximize Economic Benefits to Local Community. Information does not exist to design such an alternative based on quantified outputs. The commodity development emphasis alternative addresses this objective.
- An Alternative Providing For Intensive Uses and Commodity Development (grazing, mining, recreation access, etc.) Outside WSAs. The all wilderness alternative serves the same purpose as this alternative, except that it provides for continuing grazing use at essentially current levels. Thus, this alternative differs only by being a no grazing alternative, which is not considered relevant given the Congressional requirement that grazing be allowed to continue in BLM wilderness areas.
- District Manager's Preferred Alternative. The preferred alternatives previously announced by several district managers at the completion of their planning efforts have been modified for some WSAs to reflect minerals data and ecosystem diversity information that was not available to them at that time. In addition, the Proposed Action in this Final EIS has been modified somewhat to reflect comments received from the public on the Draft EIS and Supplement to the Draft EIS, as well as a reconsideration of some of the information pertinent to the analysis of environmental impacts. The proposed action in this Final EIS is now the district managers' as well as the State Director's "preferred" alternative.

Many comments on the DEIS and Supplement called for consideration of alternatives substantially expanding the areas analyzed to well beyond the WSA boundaries. These alternatives (i.e., the Sage and Sierra Club alternatives on a statewide scale and the Soda Mountain Wilderness Council and Committee for Idaho's High Desert (CIHD) alternatives on a more local or regional scale) have not been analyzed in the EIS. These alternatives propose a study of lands that have either been found lacking in wilderness characteristics (through application of established wilderness criteria during an open process that utilized extensive public input) or have been exempted from wilderness study. Detailed responses to these comments are included in the Responses to Substantive Statewide Comments section in this statewide volume or in individual WSA-specific appendices for the more local-scale alternative proposals.

List of Agencies, Organizations and Officials to Whom Copies of the Statement Are Sent

In addition to public scoping meetings, BLM consulted with the Oregon Department of Land Conservation and Development; the Oregon Department of Fish and Wildlife; and the U.S. Forest Service, Region 6, in developing the EIS. Close coordination was held with the Forest Service primarily as a result of the joint wilderness study of the Homestead WSA (BLM OR-6-2 and USFS 6291) and North Fork WSA (OR-5-31). The two agencies agreed on the proposed actions for these joint study areas.

Copies of the EIS were sent to the following agencies, organizations, and officials as well as the many individuals who have requested to be placed on the Oregon Wilderness Mailing List.

1. Government Agencies

Federal

Environmental Protection Agency
Federal Energy Regulatory Commission
Nuclear Regulatory Commission

- U.S. Department of Agriculture
  - Forest Service
  - Soil Conservation Service
- U.S. Department of Defense
  - Air Force
  - Corps of Engineers
- U.S. Department of Energy
  - Bonneville Power Administration
- U.S. Department of the Interior
  - Bureau of Indian Affairs
  - Bureau of Mines
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - Minerals Management Service
  - National Park Service

- U.S. Department of Transportation
  - Federal Aviation Agency
  - Federal Highway Administration
  - U.S. Coast Guard

State

Oregon

- Office of the Governor
- Department of Economic Development
- Department of Energy
- Department of Environmental Quality
- Department of Fish and Wildlife
- Department of Forestry
- Department of Geology and Mineral Industries
- Department of Land Conservation and Development
- Department of Transportation
  - Division of Parks and Recreation
- State Land Board, Division of State Lands

Nevada

State Clearing House

Idaho

- Office of the Governor
- Department of Fish and Game
- Department of Health and Welfare
- Department of Lands
- Department of Parks and Recreation
- Department of Transportation
- Department of Water Resources
- State Historical Society
- State Library

County

Planning Departments and/or County Commissioners of:

Oregon Counties

- Baker
- Crook
- Curry
- Deschutes
- Gilliam
- Grant
- Harney
- Jackson
- Jefferson
- Lake
- Malheur
- Sherman
- Wasco
- Wheeler

Nevada Counties

Humboldt

Idaho Counties

Owyhee

2. Congressional

- U.S. Senator Mark Hatfield, Oregon
- U.S. Senator Robert Packwood, Oregon
- U.S. Senator Richard Bryan, Nevada
- U.S. Senator Harry Reid, Nevada
- U.S. Senator James McClure, Idaho
- U.S. Senator Steve Symms, Idaho
- U.S. Representative Les AuCoin, Oregon
- U.S. Representative Ron Wyden, Oregon
- U.S. Representative Denny Smith, Oregon
- U.S. Representative Robert F. Smith, Oregon
- U.S. Representative Peter DeFazio, Oregon
- U.S. Representative James Bilbray, Nevada
- U.S. Representative Barbara Vucanovich, Nevada
- U.S. Representative Larry Craig, Idaho

3. State Legislature

- Oregon State Senators, Districts 24, 26, 27, 28, 29, and 30
- Oregon State Representatives, Districts 48, 52, 54, 55, 56, 58, 59, and 60
- Nevada State Senators, Capital Senatorial District and Western Nevada Senatorial District
- Nevada State Representative, District 34
- Idaho State Senator, Legislative District 12
- Idaho State Representative, Legislative District 12

4. Groups and Organizations

- 1000 Friends of Oregon
- American Alpine Club
- American Fisheries Society

American Forest Institute
American Mining Congress
American Wilderness Alliance
Applegate Citizens Opposed to Toxic Sprays
Applegate Occupation Team
Associated Oregon Industries
Associated Oregon Loggers, Inc.
Association of 0&C Counties
Association of Oregon Counties
Audubon Society (various chapters)
Boy Scouts of America
Burns Paiute Tribe
Cascade Holistic Economic Consultants
Cascade Motorcycle Club
Citizens Alliance (Wolf Creek) for Protection of Environment
Columbia River Inter-Tribal Fish Commission
Committee for Idaho's High Desert
Confederated Indian Tribes
Confederated Tribes of the Umatilla Reservation
Confederated Tribes of the Warm Springs Reservation
Crook County Rock & Mineral Club
Crook County Stockgrowers
Defenders of Wildlife
Deschutes Co. 4-Wheelers
Desert Trail Association
Douglas Timber Operators
Earth First!
East Cascade Action Committee
East Oregon Forest Protective Association
Eastern Oregon Furtakers
Eastern Oregon Wilderness Coalition
Environmental Education Association of Oregon
Environmental Education Center
Eugene Mineral Club
Eye of the Raven
Federation of Fly Fishermen
Federation to Protect the Williams Valley Watershed
Foots Creek Residents
Friends of the Earth
Furtakers of America
Gem & Mineral Club of Prineville
Geothermal Resources Council
Gold Prospectors Association
Grant County Conservationists
Hampton Butte Grazing Association
Headwaters Association
Healthy Environmental Action League
Idaho Conservation League
Idaho Environmental Council
Idaho Sportmen's Coalition
Industrial Forestry Association
Institute of Ecology
Izaak Walton League (various chapters)
Jefferson County Livestock Association
Josephine County Sportsman Association
Josephine County Sourdoughs
Josephine County Timber Riders
Keep Oregon Green Association
Klamath Canyon River Outfitters
League of Women Voters (several chapters)
Lichen (Environmental Sanctuary)
Lower Columbia Canoe Club
Maintain Eastern Oregon Wilderness
Malheur County Cattlemen's Association
Mazamas
Motorcycle Industry Council
Motorcycle Riders Association
North American Truffling Society
NE Californians for Wilderness
NW Coalition for Alternatives to Pesticides
NW Rafters Association
NW Timber Association
National Cattlemen's Association
National Public Lands Task Force
National Wildlife Federation
Native Plant Society of Oregon
Natural Resources Defense Council
Nature Conservancy
Nez Perce Tribal Executive Committee
Northwest Pine Association
Northwest Steelheaders - Trout Unlimited
Obsidians, Inc.
Ochoco Snow Sports
Oregon 4WD Clubs
Oregon Cattlemen's Association
Oregon Council of Gem & Mineral Clubs
Oregon Council of Rock & Mineral Clubs
Oregon Environmental Council
Oregon Farm Bureau Federation
Oregon Forest Industries
Oregon Forest Protection Association
Oregon Grotto Conservation Committee
Oregon Guides & Packers
Oregon High Desert Museum
Oregon High Desert Study Group
Oregon Historical Society
Oregon Horsemen
Oregon Mister Long Ears
Oregon Natural Heritage Program
Oregon Natural Resources Council
Oregon Park & Recreation Society
Oregon Sheep Growers Association
Oregon Snowmobile Association
Oregon Sportsman & Conservationist
Oregon Trout
Oregon Wheat Growers League
Oregon Wilderness Coalition
Oregon Wildlife Federation
Oregon Women for Timber
Oregonians for Food & Shelter
Owyhee Cattlemen's Association
Pacific Lands Council

Pacific Logging Congress
Pacific NW 4-Wheel Drive Association
Pine Creek Grazing Association
Prineville Ridge Riders
Resources for the Future
Rogue Gem & GEO Club
Rogue River Guides Association
Rogue River Outfitters Association
Rogue River Hang Gliding Association
Sage, Inc.
Save Our EcoSystems
Selma Concerned Citizens
Sierra Club (various chapters)
Silvies Valley Grazing Association
Siuslaw Four-Wheel Drive Club
Society of American Foresters
Soda Mountain Wilderness Council
Southern Oregon Citizens Against Toxic Sprays
Southern Oregon Northwest Citizens Against Pesticides
Southern Oregon Resources Alliance
Southern Oregon Timber Industry Association
Southern Oregon Timber Riders
Stop Oregon Litter and Vandalism, Inc.
Stop Poaching & Vandalism
Sunrise 4-Wheelers
Sunriver Anglers Club
T&E Plant Committee - Blue Mountain Chapter
Takilma Citizens Association
Terra Trackers
Threatened & Endangered - Little Applegate Valley
Timber Operators Council
Trail Riders Association, Inc.
Trails Unlimited
Utah Wilderness Association
Washington Environmental Council
Washington Forestry Protection Association
Washington State Federation of Garden Clubs
Washington Wilderness Coalition
Western Forest Industries Association
Western Forestry Center
Western Forestry & Conservation Association
Western Lands & Minerals
Western Range Service
Western Timber Association
Western Trailblazers Association
Western Wood Products Association
Whatever 4-Wheelers
Wild Horse Organized Assistance
Wilderness Society
Wildlife Management Institute
Willamette Valley Soaring Club
Willamina Hilltoppers
Yakima Rock & Mineral Club

Public Comments on the DEIS and Supplement to the DEIS

Over 2,600 comments were received during the 120-day comment period on the Draft EIS and the 90-day comment period on the Supplement to the Draft EIS. These comments were received in the form of written comments throughout the comment periods and oral testimonies obtained at the 24 public hearings held throughout Oregon, in Boise, Idaho, and Reno, Nevada.

A list of respondents appears in Table 5-1. For written comments, the list includes only a primary name for those letters with more than one signature, for petitions, and for each type of form letter. Therefore, the listing of approximately 2,600 respondents actually represents approximately 8,500 total signatures received.

Because of the large amount of comments received, only those letters received from agencies having jurisdiction or expertise (Federal, State, Local governments and Indian Tribes) are reprinted in this EIS. For those letters requiring a response that are not reprinted, only the substantive comments contained in the letters are printed.

Comments concerning statewide issues and statewide alternatives are discussed and responded to in this volume. Comments on specific WSAs are discussed and responded to in the Summary and Analysis of Public Comments sections of the site-specific appendices to this Final EIS. Comments requiring a response are those substantive comments which address the adequacy or accuracy of the information and alternatives discussed in the EIS. Approximately 10 percent of the comments received fall into this category of comments.

Most of the specific comments received on the EIS, approximately 85 percent, were concerned with the wilderness suitability and nonsuitability recommendations contained in the alternatives (primarily the proposed action) or with the specific rationale for the recommendations. These comments were utilized in developing the proposed action analyzed in this Final EIS, and they will be summarized in the Wilderness Study Reports (WSRs), which will be forwarded to the Secretary of the Interior, the President, and to Congress. As part of the WSRs, these comments will be used in the development of the Department of the Interior's final recommendations to the President and will be available to the President, and eventually to Congress, for use in developing final wilderness legislation for the WSAs in this study.

The remaining five percent of comments received either dealt with issues beyond the scope of this EIS, officially stated that the respondent had no formal comments to make, or contained no substantive comments relative to the EIS or the areas studied.

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS

ID No.	Name/Organization
0	M. GALBRIEL, NORTH SHORE HIKERS
1	NEVA CRUMP
2	NATHAN SIDLEY
3	MILTON ALLEN
4	REED SECORD
5	JACK KANALZ, USDA, SCS
6	JO ALAN FRIERSON
7	JOHN BROWN
8	MARG GAGE
9	MARTIN ALBERT
10	BARRY GREER
11	PAMELA DRAKE
12	KAREN WALTON, LEWIS & CLARK COLLEGE, COLLEGE OUTDOORS
13	LINDA LUND
14	JOHN MONFORE, WEYERHAEUSER COMPANY, EASTERN OREGON REGION
15	JOHN LINTON, TRINITY COLLEGE, OREGON EXTENSION
16	NANCY LINTON, TRINITY COLLEGE, OREGON EXTENSION
17	RONALD SALTER
18	WILLIAM CRAGER
19	KARLA KSENZULAK
20	WILLIAM CRAGER
21	RANDY DRAKE
22	CHRIS KSENZULAK
23	ROBERT MULLONG
24	WOLFGANG REUSSE
25	RANDY DRAKE
26	CHRIS KSENZULAK
27	NANCY REUSSE
28	ROB LITTLE
29	ELIZABEETH MULLONG
30	NANCY REUSSE
31	WOLFGANG REUSSE
32	KARLA KSENZULAK
33	MRS. M.S. SWEENEY
34	KENNETH LUND
35	C.B. NOLLENBERGER
36	FRED MCCOMBER
37	ANDREW PARK
38	DAVID PALMER
39	JOHN MILLER
40	GERALD GREEN
41	MICHAEL SEIDLER
42	SUSAN COX, AMERICAN ALPINE CLUB
43	LEWIS AND CLARK COLLEGE, COLLEGE OUTDOORS STEERING CE
44	PHILIP KENTNER
45	JANET JOHNSON
46	D.M. SYVERSON
47	FORREST AND VALERIE TAYLOR
48	JOHN WOODWORTH, USDI BUREAU OF RECLAMATION, PACIFIC NORTHWEST REGION
49	DOUGLAS CONNER
50	SCOTT ROGERS
51	SCOTT ROGERS
52	NOT A COMMENT
53	TOM BOURGEOIS
54	SUSAN COX
55	R. MARRINER ORUM
56	MARILYN VEEK
57	MRS.JACK DOMERQUE, JR.
58	NORMAN CHRISTENSEN
59	CHRISTINE VANPELT
60	LEA PRESTON
61	JAMES KNIGHT, NRC OFF. NUCLEAR REACTOR REG., DIV. OF ENGINEERING
62	PETE WYMAN
63	CHARLOTTE HARDING
64	GREG CAREY
65	FERN CLEGHORN
66	ALFRED RATZ
67	JEANNE PETERSON
68	DARRELL AND DARLENE LANDRUM
69	WILLIAM TRINDLE
70	CON FITZGERALD
71	JUDY GERLOCK
72	DUANE LANGLEY
73	DAVE WILLIS
74	MR. & MRS. T.F. HAMMMILL
75	CANDICE GUTH
76	JOE DANNI, HOMESTAKE MINING CO.
77	STUART GARRETT
78	NORMAN FOELLER
79	DORIS OLDS
80	MICHAEL SEIDLER
81	BILL BROWN
82	CHRIS FOULKE
83	ZEPHYR MOORE
84	ELAINE REES
85	FRED AND IRIS FELTER
86	TOM HARRIS, PNW 4-WHEEL DRIVE ASSOC.
87	MARLIS AND WALLACE SHAFER
88	JEAN MONTEVERDE
89	JOHN BROWN
90	MARION HALL
91	ANNE KINNAMAN
92	LOUISE GODFREY
93	NATHAN BORSOD
94	ADELE SANTA MARIA
95	JANET JOHNSON
96	CHARLES BAGLEY JR.
97	ADRIENNE INGLIS
98	W. EUBANKS
99	LLOYD GALLAGHER
100	HANS MCCORMACK
101	RAY HALLBERG, HALLBERG HOMES, INC.
102	REX TAYLOR
103	HAROLD WINEGAR
104	HAROLD COX
105	STANLEY BARNES
107	SAM SHAVER, EASTERN OREGON FURTAKERS, CHAPTER 11-E
108	NANCY MORGAN
109	ROBERT KONO
110	ELEANOR FITZGERALD-UTLEY
111	JOHN FIELDS
112	ALISON KING
113	FRAN RECHT
114	DELORES PORCH
115	JERRY DRAKE
116	LEROY FOX
117	RICHARD ROWLAND

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
118	LINDA RICHMAN
119	BARRY CLOCK
120	MARGIE GAGE
121	FRANK WILLIAMS
122	PAT HARRIS
123	TOM HARRIS
124	SHIRLEY CUNNINGHAM
125	SHIRLEY CUNNINGHAM
126	COLLEEN BEARDSLEY
127	ARLENE GOWING
128	ARLENE GOWING
129	MARGIE GAGE
130	BILL GAGE
131	BILLIE CHAMBERS
132	BILLIE CHAMBERS
133	GORDON TRIPP
134	COLLEEN BEARDSLEY
135	BILL GAGE
136	MARGIE GAGE
137	JOHN MARKS
138	LARRY RITCHEY
139	LINDA PRIEM
140	TONI HOLMBERG
141	ROBERT HALE
142	ALAN AND MYRA ERWIN
143	MICHAEL ROE
144	DANIEL POOLE, WILDLIFE MANAGEMENT INSTITUTE
145	PATRICK PILCHER, LONE PINE FORESTRY SERVICES
146	KATHLEEN KOLB
147	GWYNE SCHULTZ, AUDUBON SOCIETY, LANE COUNTY CHAPTER
148	JIM LEBO
149	JANE SCATES
150	KEITH COMSTOCK
151	MARCIA CHAPMAN
152	LAWRENCE CROCKER
153	DAVID PILZ
154	FLEMMING BERTELSEN
155	GLENN VAN CISE
156	LILLEBIL CASTELL
157	M.L. THOMAS
158	ETHEL GOELLER
159	PAM SULLIVAN
160	RICHARD ROSS
161	WILLIAM TRACY, OREGON CATTLEMEN'S ASSOCIATION, PUBLIC LANDS COMMITTEE
162	BETH HELLER
163	JULIA WARNER
164	DENNIS PHILLIPS
165	DAN KNIESNER
166	ALICE JACOBSON
167	ROBERT SHEASLEY
168	ANN TATTERSALL
169	KEN CLOCK
170	ALLEN GRIFFIN
171	W.G. DE PEARCY
172	CASCADE GELLER
173	M.L. THOMAS
174	SUE HALL, COLUMBIA GORGE COALITION
175	ROBBIN LACY
176	KENNETH KOLB
177	HOMER AND MARGUERITE CAMPBELL
178	RONALD YOUNG
179	MARY ANNE KOCH
180	WILLIAM O'SULLIVAN
181	DONALD CRAWFORD
182	JULIE MATHER
183	MICHAEL WARREN
184	JERRY HARAM
185	RAY AND PHYLLIS DAVIS
186	ALFRED AND KARLA KRAMPERT
187	TOM NUGEANT
188	RANDY HEILLER
189	JIM ALCHLEY
190	ROY ELUCGREN
191	STANLEY JEWETT, JR.
192	PETE PAUL, TUALATIN DAM PARK HOMEOWNERS
193	PAUL PAULSEN, OREGON 4-WHEEL DRIVE CLUBS
194	R. A. CHAMBERLAIN
195	ROBBIE EARON, SIERRA CLUB, MT. JEFFERSON GROUP
196	RICHARD CHANDLER
197	SUSAN KOFAHL
198	GAIL HULT
199	MARI HOFFMAN, AUDUBON SOCIETY, YAKIMA VALLEY CHAPTER
200	STEVEN AND STEPHANIE COLE
201	JOHN PERRY
202	BENJAMIN BONNLANDER
203	GARY STRONG
204	ALAN HAUSRATH, IDAHO ENVIRONMENTAL COUNCIL
205	JAMES GLOVER
206	HENRY WRIGHT, WESTERN OIL AND GAS ASSN., PUBLIC LANDS COMMITTEE
207	JULIE LINEBARGER-TAYLOR
208	ROBERT HUGHES
209	RICK AND CAROL REECE
210	HOWARD MITCHELL
211	NICK ARNIS
212	CHRISTINE FISCHER
213	DAVID BROCK
214	NANCY OESAU
215	MR. AND MRS. WILLIAM CUDDINGHAM
216	RAYMOND HATTON
217	RANDY AND LESLIE SMITH
218	BARBARA REEVE
219	CAROLYN ECKEL
220	JOHN SWANSON
221	CHARLES WATSON, JR., NAT'L. PUBLIC LANDS TASK FORCE, NEV. OUTDOOR RECREATION ASSN
222	M. JENELYN AND DANIEL WEBSTER
223	W. WARREN SCHAFER
224	EDRAH SPIELMAN, OREGON HORSEMEN'S ASSN.
225	JAMES MONTEITH, OREGON NATURAL RESOURCES COUNCIL
226	ANTHONY PRESUTTO
227	MARILYN COUTURE, LINFIELD COLLEGE
228	LEONARD MOSER
229	WALT ANDERSON
230	ROBERT KONO
231	ROSEMARY SPAULDING
232	GERHARD PAGENSTECHER, MULTNOMAH BUSINESS ASSOC.
233	MARIA BOUSBER
234	JEAN MASSIE, NATIVE PLANT SOCIETY OF OREGON, WILLAMETTE VALLEY CHAPTER
235	DARREL EATON
236	ROY ZIMBREIK
237	MARILYN FISHER
238	ULO KIIGEMAGI

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
239	MARJORIE MILLER
240	R.C. JONES
241	KAREN WAGNER
242	CHRISTOPHER ROBINSON
243	THAD STANFORD
244	PAUL FRITZ
245	TERRI GODZALEZ
246	TOM BOURGEOIS
247	DALE WHITE, COUNTY COURT FOR HARNEY COUNTY
248	LEROY AND LESLIE SMELCER
249	JEFF AND JEANIE GILMORE
250	IRENE DAVIS
251	DONALD PECK
252	DR. AND MRS. GEORGE H. BLOUNT
253	EWART BALDWIN, UNIVERSITY OF OREGON, DEPT. OF GEOLOGY
254	BOB DOPPELT, OREGON RIVER EXPERIENCES INC.
256	ANONA HEIMBIGNER
257	W.R. BUS GIBSON, MAZAMAS, CONSERVATION COMMITTEE
258	LAWRENCE NEILSEN
259	ALENE ALLEN
260	STEPHEN MOEN, IZAAK WALTON LEAGUE OF AMERICA, OREGON DIV. OF PUBLIC LANDS
261	KIM NELSON, OREGON STATE UNIVERSITY, DEPT. OF WILDLIFE
262	JOHN KELLER, NATIONAL AUDUBON SOCIETY, ROGUE VALLEY CHAPTER
263	RUSSELL PENGELLY, DESERT TRAIL ASSOCIATION
264	THEO ALLAN
265	JOHN HAMMOND
266	JOHN BISHOP
267	SUSAN SCORSO
268	RICHARD ROSS
269	WILLIAM BARBER
270	STEVEN FISHER
271	JUDY VANTIL
272	GARY FOGLIO
273	BOB HOLLEMAN
274	SIEGFRIED BING
275	MISHKA COHEN
276	AMANDA PUNTON
277	GEORGE HARPER
278	NATIONAL AUDUBON SOCIETY, MARBLE MT.CHAPTER
279	GARY O'CALLAHAN
280	CHIP GREENDALE
281	H.A ELARTH
282	LISA KIELEY
283	ALICE UPDEGRAFF
284	RICH CURTIS, HESSEL TRACTOR & EQUIPMENT CO.
285	DOUGLAS WILKERSON
286	CATHERINE METZ WARD
287	MARK WHITNEY
288	RICHARD BELL
289	D.A. TURCKE
290	D. MARK PARR
291	PAUL AND VIOLET ORR
292	CLAY SPENCER
293	SUE MILLER
294	SKIPPER MAIDE
295	CHARLES AND EUNICE SHORT
296	S.V. SWEARINGEN
297	C.W. BOOTH
298	RAMMONA OSBURN
299	ROSE STRICKLAND, TOIYABE CHAPTER
300	ALEX HANSON
301	ALEX HANSEN, ASSOCIATED OREGON LOGGERS INC.
302	NANCY WOODWARD
303	FRED AND ELENOR SALINGER
304	RICHARD WILSON
305	MYRA ERWIN
306	LOIS WILSON
307	ALICE BLOSSOM
308	CURTIS NESHEIM
309	MIKE JAKVBAL
310	DUNCAN AND ADEAN MACKENZIE
311	FLORENCE EBELING
312	DAN AND MARY ARRITOLA
313	ROGER SAMELSON
314	MARCIA CAMPBELL, OREGON STATE UNIVERSITY, COLLEGE OF OCEANOGRAPHY
315	LEE DRESSLER, LOGGERS AND CONTRACTORS SUPPLY
316	WALTER ANDDOROTHY PELECH
317	RONALD POLLEY
318	ROBERT KANNE
319	SCOTT VOJTA
320	HOWARD CASSELLS
321	B.M. BAKKE, OREGON TROUT
322	KATHY VOSS
323	WENDY AND DAVID REIN
324	MARCUS JERNIGAN
325	CLIFFORD LANSDUN, JR., SUPERIOR LUMBER CO.
326	REBECCA ALLISON
327	MR. AND MRS. DAVID GRAY
328	JON SEARS
329	H VOGT
330	SHARON SAAR
331	THOMAS CABLE
332	JOHN PAMPERIN
333	WILLIAM KENNEDY
334	CAROLA LACY
335	PHIL RICKEL
336	KELLY AND ROSANA HART
337	ROBERT PLANKENBORN, A AND P LOGGING, INC.
338	TIEL JACKSON
339	WILLIAM LADEN
340	MILDA HESTER
341	MARILYN HOPKINS
342	LEO AND ALICE BISHOP
343	JOHN BJERKE
344	CARROLL AND BENITA THOMPSON
345	BRUCE DUBENDORFF
346	CLIFTON MERRITT, AMERICAN WILDERNESS ALLIANCE
347	FORREST COOPER
348	STEVE JOHNSON
349	PHILIP YOUNG
350	CLINTON WYNN
351	ROBERT WATSON, SPAULDING AND SON, INC.
352	DIANA BRADSHAW
353	JOHN SARGENT
354	JOE JONES
355	DOREEN UNDSTEDT
356	RICHARD JALI
357	JAMES MARSH
358	MARY BOICE
359	MERLE TURNER

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
360	WILLIAM GLOSSER
361	LYLE LINTON
362	MARK GOODING
363	JIM MAROTTA JACOECKE, FRIENDS OF THE EARTH
364	MAJORIE TURNER
365	LARRY ROSENOW
366	GEORGE SCHINDLER
367	DAVID AND KACHRYN HOWARTH
368	KAREN LEIENDECKER
369	EDGER KUPILLAS
370	N. STEVENSON
371	JOSE PHILIPS
372	LINDA CUMMINS
373	WALTER YUNGEN, NATIONAL AUDUBON SOCIETY, SALEM CHAPTER
374	DAVID SWANSON
375	DAVID KING
376	ESTHER TEPFER
377	MARY JO WEVERS
378	BETTY MORGAN
379	MR. AND MRS. STEVE GOELLER
380	HERB DIRKSEN
381	ROBERT PABST
382	DICK VANDERSCHAAF, OREGON NATURAL HERITAGE DATA BASE CC
383	JERRY BISHOP
384	MARIAN ROBERTS
385	DAVID HERBST, OREGON STATE UNIVERSITY
386	MOLLIE SIEGEL
387	DAVID WALDRON
388	SUSAN LINDSTEDT
389	ROGER GARRETT
390	RICHARD SHEFFLER
391	RODNEY GREENO
392	MR. AND MRS. ROBERT KELLER
393	JESSE HIMMELREICH
394	DON STRUTHERS
395	DONALD OXFORD
396	WAYNE ROLLE, NATIVE PLANT SOCIETY OF OREGON
397	VERN CRAWFORD
398	R. BRYAN NELSON
399	KENNETH KEATING, LOWER COLUMBIA CANOE CLUB
400	LEN RAMP
400	LEO RAMP
401	JOHNATHAN AND JANET WEST AND SCHAEFER
402	COURTNEY LOOMIS
403	WAYNE AND MARION HOWE
404	JOE WEARDON
405	JO ANNE HATHAWAY
406	VIRGINA KUTSCH, BENTON COUNTY FARM BUREAU
407	HENRY J. PAVELEK, NORTH AMERICAN TRUFFLING SOC.
408	GERTI SCHRAMM
409	HAROLD JUDSON
410	DON BIEGHLER
411	MAX ZISCHKALE JR.
413	BETTE KENT, MECA WILDLIFE TASK FORCE
414	OLGA AUTRY
415	EARL T. WALKER
416	RANDY ALBRIGHT
417	JOHNATHAN M. TEAGUE
418	JIM TICE
419	DAVID STORDUER

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
420	KAREN L. PEREZ
421	ROGER K. JAMES
422	THOMAS BLISS
423	OTIS D. SWISHER
424	JERRY JAYNE
425	SCOTT ENGLISH
426	HENRY FREEMAN
427	M. BOYSEN
428	LINDA STREMEL
429	MPRBERT LEUPOLD JR.
430	GREGORY SPEER
431	MRS. LAWRENCE PIERCE
432	JEAN WHITMAN, PNW 4-WHEEL DRIVE ASSOCIATION, REGION 3
433	REBECCA KREAG
435	DONALD MCLEOD, OREGON STATE UNIVERSITY, DEPT. AGRIC,AND RESOURCE ECO
436	JOHN BARCY
436	LOIS BARRY
437	JACK TRUEBLOOC, IDAHO SPORTSMEN'S COALITION
438	RUTH FLINT
439	L.L. STEWART
440	JOHNATHON ZONANA
441	KEN BERG
442	NEIL ARMANTROUT
443	LAWSON LEGATE
444	RANDOLPH JORGEN
445	ERIC ROBINSON, E.V. MARTIO TRUCKING CO.
447	BARBARA HAWKINS
448	TRISTA HOFFMAN
449	JOSEPHINE BRIGGS
450	WILLIAM ROSE
451	R.M. FREDSELL, WESTERN WOOD PRODUCTS ASSOC., RESOURCES AND ENVIRONMENT
452	ROBERT ZALKIN, CONGREGATION BETH-EL-ZADECK
453	SUSAN ORDWAY ROLA
454	KEITH BUTTS, MUNNELL AND SHERRILL, INC.
455	HENRY HEYDEN, TRI-COUNTY HEREFORD ASSN.
456	LESLIE SMELCER
457	ROLAND LINDSEY, LINDSEY LUMBER CO.
458	KENNETH LUDERMAN
459	TYRRELL HART, HARTS JEWELERS
460	LINDA SLATER
461	OLIVER DALTON
462	JUDY NETHERWOOD
463	THOMAS GRIFFIN, WILLAMETTE VALLEY SOARING CLUB
464	DAVID WEINTRAUB
465	CHARLES HARWOOD
466	DENNIS NELSON
467	ELAINE JOYAL
468	JIM FAIRFIELD
469	JOE YUSKA
470	KARL ANDERSON
471	MRS.MARJORY KELM
472	MARJORIE DEFENBAUGH
473	CHRISTOPHER POWERS
474	FRANK AND JANET ALEXANDER
475	JOE AND JEANNE ANDERSON
476	ELAINE SMITH
477	TIMM TURRENTINE
478	JIM MYRON
479	SUSAN E. MARKLEY

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
480	GREGORY MILLER, ASSOCIATED OREGON LOGGERS, INC.
481	RICHARD PEREZ
482	ED SETZLER HYSTER SALES CO.
483	DIANE TAUDVIN
484	LARRY BROWN, SOUTHERN ORE. RESOURCE ALLIANCE
485	SCOTT ASHCOM, OREGON FARM BUREAU, NATURAL & ENVIRON.RES.DIV.
486	STEPHEN CROSS
487	JEANNE HUFFSTUTTER
488	CARINNA PEELS
489	DEBORAH GARSTER
490	JOHN WALKER, NEVADA OFFICE OF COMM. SERV., STATE CLEARINGHOUSE
491	SARAH MERSEREAU
492	RAY DOERNER, ASSOCIATION OF O&C COUNTIES
493	KEN MACKLIN
494	RANDY KRICHBAUM
495	SANDRA LYNN
496	JOSEPH HUNKINS
497	JOHN MONFORE
498	TOM WARD
499	E.G. MCCHESNEY
500	KEITH WALRATH, PACIFIC POWER & LIGHT CO.
501	ROBERT KELLER, ORE. FOREST PROD. TRANSP. ASS.
502	MARIANA BARNBOLDT, NATIVE PLANT SOCIETY OF OREGON, WILLAMETTE VALLEY CHAPTER
503	ANDREW JACKMAN, ROGUE COMMUNITY COLLEGE, RECREATION RESOURCE MGT.
504	J.E. BARRY, RANGE ECOLOGY GROUP
505	DEBUSE EJORDBECK
506	JAMES ARNESON, NATIONAL AUDUBON SOCIETY, UMPQUA VALLEY CHAPTER
507	ERNEST WILSON
508	THELMA OTLEY
509	FRED OTLEY
510	KEVIN KELLY
511	ELLEN HAMMOND
512	KEVIN TALBERT
513	CATHERINE KELLOGG
514	BRIAN AND RUTH ANN ALMQUIST
515	JANET OCROWLEY
516	MRS.CATHERINE GIBBS
517	JOHN CUNNINGHAM
518	DAVID KEISER, KOGAP MFG. CO.
519	LONNIE ROBARTS
520	DENNIS LEYBOLD
521	MARCIA KELLY
522	MICHAEL KELLETT
523	ROGER MURRAY
524	MELVA MCLEAN
525	ALAN OTLEY
526	MICHAEL JONES
527	HENRY HOLMES
528	ROBERT WARREN
529	JOSEPH KRIEG
530	LAUREL RUBIA
531	FANNIE LEE FORD
532	MICHAEL GRAYBILL
533	NEIL SMITH
534	ROSALIE MORE
535	JEFFERY CROOK
536	JOHN BISCHOFF
537	WILLIAM ZWEIG
538	CONNIE KRUMMRICH

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
539	WALTER MOORE
540	ROGER AND SALLY SCHEUSDER
541	PETER MORTINDALE
542	HAL AND CATHY WILLIAMS
543	GARY BAKEL
544	ROBERT PHILLIPS, IZAAK WALTON LEAGUE OF AMERICA, PORTLAND CHAPTER
545	MARK NELSON
546	LILLIAN SANTAMARIA
547	THOMAS MESSENGER
548	JOHN WALENTA
549	GLEN CARLSON
550	KEITH CAMPBELL
551	LISE SIGNORIORI
552	NANCY SPENCER
553	OPAL TAYLOR
554	S. SMITH
555	LYNNE BACHMAN
556	C.R. BAKER
557	MRS. ALLAN OTLEY
558	ROBERT MCLAUGHLIN
559	BRUNO MEYER, MEDFORD CORPORATION
560	COREEN HAMPSON
561	SCOTT HAMPSON
562	DAVID HILLIS
563	TOM TAYLOR, OREGON SPORTSMAN, HALFWAY CHAPTER
564	DARRELL CARPER
565	MICHAEL CREAGER
566	GILBERT LEE, OREGON SPORTSMAN, HALFWAY CHAPTER
567	JACK HUFFBUHR
568	JOHN WINTER
569	SAMUEL BURR, JR.
570	CAROLYN OSBORNE
571	SUZANNE STONE
572	JOE MORAWSW
573	ELIZABETH NEWCOMB
574	CHERYL CLARK
575	LEIGHTON HO
576	LEVERETT AND CAROL CURTIS
577	KAREN APLAND
578	BOB AND JUDY GODFREY
579	JAMEY AND DARLENE POTTER
580	J.W. AND CAROL ROBERTSON
581	MRS. JAMES BASKER
582	ILSE POLITZER
583	MR. AND MRS.J.B. TORRANCE
584	MR. AND MRS. J.B. TORRANCE
585	JOHN KELLER
586	D.E. WIMBER
587	RALPH ROGERS
588	ELLEN MENDOZA
589	CLARIBEL NEER
590	DENISE GERSCHLER
591	W.EARL CALHOUN
592	MRS. JAMES ALLEN
593	SYLVIA ALLENHEILIGEN
594	DEMETRA PALOMARI
596	ALLEN HAMMER, UNIV. OF MISSOURI-COLUMBIA, MO. INST.OFPHYCHISTRY
597	MAUREEN CALLAHAN
598	ROD HARDER, FUR TAKERS OF AMERICA, OREG. FUR TAKERS CHAPT.11
599	TOM BROOKS
600	PETER BOWLER
601	LARRY LYNCH

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
602	JIM MCNEIL, ROUGH AND READY LUMBER CO.
603	GLENN WIENSZ
604	BRIAN SCHAEFFER
605	JACK REMINGTON
606	FAY GILES, CARL GILES LOGGING
607	MICHAEL LAMOTTE
608	RON KINNAMON
609	MR. AND MRS.ROBERT WOJCHEWSKI
610	B. D. AND MYRA KIEKEL
611	ELIZABETH HANDLER
612	LELAND GOOD
613	DEANNA MUELLER-CRISPIO
614	JAMES LANGLEY, MALHEUR COUNTY FARM BUREAU
615	CLAIRE CARDER
616	MARK STRAIT
617	STEPHEN BATES
618	ROBERT WEISS
619	DAVID WESTPHAL
620	ALVA MITCHELL
621	FRANK ORLICH
622	JEFF SAWERS
623	LOWELL JONES
624	CAROLINE LINDSSTEDT
625	LINDA AXTELL
626	MATHEW ROBINSON
627	ROY ELMGREN
628	MICHAEL VALDEZ
629	LYNNN AND SHERRY HUNT
630	SUE KUPILLAS
631	TOM NIEMELA
632	JUDY SMITH
633	CAROL WARE
634	CHARLOTTE SNAP, BURNS PAIUTE TRIBE
635	JOE TRUAX
636	JOHN BARRY
637	MICHAEL TAYLOR
638	JEFFERY HANSON, LEWIS AND CLARK COLLEGE
639	DAVID PADDOCH
640	PETER WILLIAMSON
641	JAMES LOVE
642	BECKI KENNEDY
643	STANLEY MARCHINGTON
644	ROBERT KONO
645	MARCUS SMITH
646	HERB CURRY
647	JOSEPH HOLADAY
648	HANS ISCHERSICH
649	MICHAEK COLAVITE
650	BRUCE MCCULLOUGH
651	GARY HANSON
652	MYRTICE MORRISON
653	ALLEN AND MYRA ERWIN
654	ANNE CONN
655	ALAN EDWARDS
656	CHARLES LENHARDT, LENHARDTAND ASSOC. INSURANCE
657	JOHNNY O'NEIL
658	B.L. KAUFMAN, CROMAN CORP., LUMBER DIVISION
659	BETTY BEWLEY
660	ALICE EKSHOFF, THE BADLANDS BUNCH
661	GARY JANTZER, JANTZER AND SONS LOGGING INC.
662	DON FITZGERALD
663	CLIFF JUDSON
664	KRIS ELKIN
665	RICH AND JOYCE REID
666	CAROL WARE
667	WES AND ANN MCNHAMARA
668	CONNIE MAY
669	GARY FOSTER
670	MRS. SUSAN WILSON
671	MARJORIE KELLOG OGDEN
672	KATRINE FLETCHER
673	KATHY AND JAY LOVE
674	PAUL POORMAN
675	C.WAYNE CHASE
676	DUANE CRITES, TIMBER PRODUCTS CO.
677	RICHARD COLE
678	DUANE SMITH, GREGORY FOREST PRODUCTS, INC.
679	RICHARD LIS
680	JAMES CRAINE, WESTERN TIMBER ASSOC.
681	MICHAEL WHEELOCK, GRAYBACK LOGGING INC
683	CRAIG MARKHAM
684	ROSALINDE WESTLING
685	LARRY AND SUSAN OTLEY
686	JUDY ELLI
687	BETH PARMENTER
688	ROBERT EVINGER
689	MARK WILK
690	SUSAN CAMPBELL
691	JAMES AND HARRIET GILLAM
692	DOUGLAS UNDERWOOD
693	MICHAEL SULLIVAN, INDUSTRIAL FORESTRY ASSOC., INDUSTRY AFFAIRS
694	DOUGLAS UNDERWOOD
695	BARRETT BROWN
696	LORIE HARTMAN
697	ROD LARSON
698	ELLEN TRUEBLOOD
699	DOUGLAS SCHMOR
700	LESLIE AND BRUCE SARGENT
701	WILLIAM CARLSON, HUSKY INDUSTRIES INC.
702	LOWELL KRESSNER
703	LARUA FLETT
704	MICHAEL WILLIAMS
705	CLIFF GRAHAM
706	A.J. WAGNER, SCOTT VALLEY OUTDOOR SUPPLY
707	OLGA ROSCHE
708	KURT HERZOG
709	CAROL COOSWELL
710	JANE AND ERNIE BUTICE
711	JAMES REDDEN
712	CHARLES RAINES
713	VOLNEY FACTO
714	RUSS JOLLEY
715	RICHARD BROWN
716	JAMES BAKER, SIERRA CLUB, PUBLIC LANDS COMMITTEE
717	BRUCE DEVLIN, CITY OF BEND
718	MARY HAYDEN
719	LUCRETIA SMITH
720	TOM SAVAGE
721	KAY NOEL
722	MR. AND MRS.D.H. PEARL
723	JERRY AND MARILYN LEWIS
724	FRANK KISER
725	KEVIN PROESCHOLDT
726	EVELYN EVERETT
727	NANCY KRAPE
728	RONALD SMITH
729	DAVID BERGESON
730	CAMILLA PRATT
731	MARGARET ZIMET

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
732	MARY BETH NEARING
733	R.H. RUDISILE, BOISE CASCADE CORP., WESTERN OREGON AREA
734	DAVID RAMSTEAD
735	BOB POWNE
736	DANIEL GOLTZ, EUGENE F.BURRILL LUMBERCO.
737	GREGORY SCHROER
738	HARRY AUSTIN
739	ROBERT LOFGREN
740	BRENT KNAPP
741	MIKE MEREDITH, MEDFORD CORP.
742	MAVIS OARD
743	JIM RIGGS
744	MARK ROCHESTER
745	TERESA MAURER
746	JUANITA WILLIAMS
747	JAMES MORGAN
748	FRED BAKER
749	PETER STOEL
750	FRANK NORRIS
751	MARION CROW, OREGON SPORTSMAN, HALFWAY CHAPTER
752	GARY REESER
753	STUART YAFFE
754	MR. AND MRS.FRE DGOELLER
755	ROD AND DEB ROBERTSON
756	BRUCE LUMPER
757	ELENOR ADELMAN
758	HARRY HUTTON, PACIFIC POWER AND LIGHT CO.
759	ROSE THORPE
760	KENT COE
761	CALVIN LLOYD, MOUNTAIN FIR LUMBERCO.INC., MURPHY CREEK DIVISION
762	ROBERT MOTSINGER
763	SYDNEY HERBERT
764	MICHAEL HOUCK
765	EVAN ZIMMERMAN
766	RUTH MIZUMOTO
767	DAVID HAUGEBERG
769	LOUIS ANSTRY
770	WILLIAM ROBERTSON
771	KEN BEUTZ
772	ANNE BEUTZ
773	MIRIAM SCHWAB
774	LINDA CRAIG, NATIONAL AUDUBON SOCIETY, AUDUBON SOC. OF PORTLAND BR.
775	KELLY SMITH, SIERRA CLUB, OREGON CHAPTER
776	ANTHONY MORRILL, US DEPT. OF ENERGY, BONNEVILLE POWER ADMIN.
777	R.DENNIS HAYWARD, NORTH WEST TIMBER ASSN.
778	RALPH SAPERSTEIN, DOUGLAS TIMBER OPERATORS, INC.
779	SUE JOERGE, SO. OREG.TIMBER INDUS. ASSOC.
780	WILLIAM STEVENSON
781	AGNUS BROWN
782	LARRY BROWN, LARRY BROWN & ASSOC,
783	ROSEMARY MICHALEE
784	JEAN DURNING, WILDERNESS SOCIETY, NORTHWEST REGION
785	JULIE RECHTIN
786	BRUCE BOCCARD, SODA MT. WILDERNESS COUNCIL
787	S. TIMOTHY WAPATO, COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION
788	IVAN AND BETTY JEFFERS
789	CHRISTOPHER BRATT, HEADWATERS INC.
790	SUSAN HANSCOM
791	FRANK VAUGHN
792	BOB SLAGLE
793	DAVE VINCENT, JOSEPHINE CO. FARM BUREAU
794	JOHN AND MARNIRAPF
795	WILLIAM JONES, NE CALIFORNIANS FOR WILDERNESS
796	BRUCE STEWART
797	CORLY AND JOANNE MARSHALL
798	CARROLL PALMER
799	ELFREDA SWOARD
800	EUNICE JORDAN
801	LLOYD JORDON
802	JULIE DORMAN
803	GAYLEE GOODRICH
804	ABRET STAFFORD
805	JOHN AND MARGI TIMM
807	BONNIE SUTPHIN
808	GLEN SPULLER
809	JACK FRIBERG
810	WILLIAM BARZLER
811	STEVE EVERSMEYER
812	DEBORAH RICHIE
813	RUTH ROBBINS
814	A. MARGARET HUTCHISEN
815	J.R. DANIELSON
816	RONALD MCLEAN
817	NANCY GORDINIER
818	DONALD STATH, FRED S. JAMES INS. CO.
819	VERA STANSELL
821	WILLIAM HAAS, THE CHAMBER OF MEDFORD/ JACKSON
822	WILLIAM WILLITS, SR.
823	JANET LANG
824	DALE ROSS
825	DEITER MAHLEIO
826	ANDY DAPPER
827	LYNN HERRING
828	CLYDE AND ARLENE MILLER
829	VERNON RUSSELL
830	HARVEY HURD
831	DON MILLER
833	HELEN GODSIL
834	PATTI KENT
835	LARRY KENT
836	GARY KENT
837	SHARON KENT
838	MONTE LIEGNER
839	SUE ARNOLD
840	JOE ARNOLD
841	WILLIAM BAKER
842	JACELYN WAGNER
843	MARGARET FADLEY
844	DIANE PINKERTON
845	ROBERT ENGSTROM
846	LILLIAN CURREY
847	JUDITH HOTCHKISS
848	EDIE CASEY
849	LAURA MCKERNAN
850	MEL AND DEBBIE HUMMEL
851	EARL ALLEN
852	WYNN HENRICKS
853	HERBERT ARONSON
854	CLARA NAISUM
855	PETE FORDYCE
856	JEAN FERDYCE
857	BEVERLY GOODLOE

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
858	JOHN CANTRELL
859	ROBERT AND VIRGINIA ADAMS
860	CONNIE HENRICKS
861	LYNN ARONNSON
862	MERLIN RUPP
864	W.D. JOHNSON, ROLLINS, BURDICK, HUNTER
866	SHARON POLLEY
867	TERESA BRUNGARD
868	LISA BOYLE
869	BILL AND DONNA HUNT
870	F. DALE REESE
871	EILEEN CLARK
872	LEON THOMPSON
873	LUCILE THOMPSEN
874	MAISIE BENNETT
875	THOMAS NELSON
876	CHAS. AND ELINOR RUTHERFORD
877	SHIRLEY THOMPSON
878	BYRON BENNETT
879	WAYNE OUSLEY
880	CAMILLA HENRICKS
881	CECYL SAVAGE
882	JOHN PENLAND
883	EUGENIA OTLEY
884	MRRS. JOHN PENLAND
885	EDWIN AND CHARLOTTE FARNHAM
886	DOROHY BROOKSHERE
887	REDNEY AND CINDY HOAGLAND
888	ROBERT SLAGLE
889	PATRICK JAMESON
890	MR.AND MRS.DOYLE PARROTT
891	EMMETT ADAMS
892	CHARLES GARDNER
892	DAN AND FLORIS ALLEN
893	BONNIE DUNN
894	MARNIE JOHNSON
895	CLARICE WATKINS
896	ANITA RUPP
898	JOHNIE "CACTUS" SMYTH
899	D.W. TREVEY
900	WILLIAM CRAMER
901	ELSIE BENNETT
902	TOM BENNETT
903	ELSIE TORKELSON
904	HOWARD OTLEY
905	KEN AND BARBARA ARNOLD
906	BETTY MORGAN
907	KIRK PETERS
908	PETE ROBEDEAU
909	JOHN SCHARFF
910	HERBERT DIXON
911	HAROLD AND MARY OTLEY
912	IRENE GARDNER
913	KATHLEEN TAGGAT
914	LARRY DUNN
915	RUSSELL ZINK
916	ROGER SNYDER
917	MILAN LUCICH
918	JOMAA MERIALAR
919	CAROL CURRY
920	HOWARD KORTHAUS
921	P. HOLLIS
922	GRETCHEN NICHEITS
923	SHIRLEY CARSON
924	D.D. HILLS
925	DUANE NEUSCHWANDER
926	SAMUEL DUNN

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
927	KEN NICHOL
928	MRS. W. JAMESON
929	WILLIAM BEAL
930	JOHN WOOSTER
932	C.M. OTLEY
932	CHARMAIGO ARONSON
933	MARY HOWDEN
934	CHUCK MACOMBER
935	DELBET GROSS
936	ANDREA DAVIES
937	MARVIN JESS
938	ALLENE DUNN
939	RAE-JEAN NEUMANN
940	GUSTAVE NEUMANN JR.
941	ANGEL POLLEY
942	FRANCES PREWETT
943	BLANCHE DUNN
944	ERRY AND NANCY WILLIAMS
945	MARY MOYE
946	KENNETH MOYE
947	BETTY SPRUCE
949	JOHN SPRUCE
950	MARLA ARONSON
951	ARLYN ARONSON
953	RUSSELL DRAKE
954	VIRGINIA LUPHER
955	ROSS HENDRIKS
955	TY HENDRICKS
956	MARY DIXON
957	DAN EDWARDS
958	LORIN SHERBORN
959	BERNIE GERMAN
960	CLAUDE HERNDON
961	JAMES SMIH
962	OLIN FISKS
963	L.H. PETRSN
964	HARLOW MOORHEAD
965	JOSEPH DOELGER
966	SANDRA WILLIAMS
967	ROBERT MCCLENMEN
968	ADRIENNE MOORHEAD
969	RUTH TAMAGRIE
970	DAN NICHOLS
971	SHIRLEY THOMPSON
972	DON S. ORLANDO, ORLANDO TROUT CREEK RANCH
973	WILLIS KIMBALL
974	MELANIE KIMBALL
975	DON ORLANDO
976	TOM SEWELL
977	CATHERINE GIBBS
978	EDWIN DAVIS, ALVORD RANCH-ROARING SPRINGS
981	JEFFERY HANSEN
982	BETH MCEVOY
983	ROSALIE MOR
984	JIM CODY
985	BYRON RENDAR
986	H. MIKE WALKER, OREGON DEPT. OF FORESTRY, OFFICE OF THE STATE FORESTER
987	HARRY HUTTON
988	MICHAEL KELLMAN
989	S. HENRY HALL
990	RONALD KRANICK
991	JOHN WOOD
992	DANIEL SHERMAN
993	ROGER WINTER
994	PETER GOTHRO
995	JEAN CAHN

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
996	ALAN SWEGER
997	VICTOR ATIYEH, STATE OF OREGON, OFFICE OF THE GOVERNOR
998	BOB WEIR
999	BARBARA FOX, NATIVE PLANT SOCIETY OF OREGON
1000	SUSAN HOPPER
1001	LAURA FLETT
1002	HAL LITTYL
1004	JAMES BIETKE
1022	ROBERT HEAVY
1023	KEVIN COSGROVE
1024	DOUG PARK
1025	KELLY SMITH, SIERRA CLUB, OREGON CHAPTER
1026	KATHY GRAHAM
1028	ROBERT BURD, US ENVIRONMENTAL PROT. AGCY., REGION X
1029	BOB DUPPELT, OREGON RIVER EXPERIENCES-INC.
1030	LARRY AND EMILY TRUMBULL
1031	SIDNEY FRIEDMAN
1032	D'ARCY BANISTER, USDI-BUREAU OF MINES, BR.ENGINEERINGSTUDIES
1035	JEAN DANIELSON
1036	PAUL LEMMON
1037	EVELYN DUSTERHOUT, NATIONAL AUDUBON SOCIETY, ROGUE VALLEY CHAPTER
1038	CHARLES INMAN
1039	KURT HERZOG
1040	RUSS MCKINLEY, BOISE CASCADE CORP., SOUTHERN OREGON REGION
1040	RUSS MCKINELY, BOISE CASCADE CORP., SOUTHERN OREGON REGION
1041	STEVE BRIDGES
1042	KATHY GORHAM
1043	NORENE FALDLEY
1044	BRUCE BOCCARD, SODA MT. WILDERNESS COUNCIL
1045	DAVE WILLIS
1046	ROGER MURRAY
1047	FRED HARRISON
1048	SUSAN HANSCOM
1049	VERN CRAWFORD
1050	FRED SHEPARD
1051	JEFF AND JEAN GILMORE
1052	JED STALEY
1053	MARC PREAVOST, OREG. NATURAL RESOURCES COUNL.
1054	DIANE MEYER
1055	BRIAN ALMQUIST, CITY OF ASHLAND
1056	DAVID SHUTEROFF
1057	LAURA FLETT
1058	NANCY MORGAN
1059	SUE JORGER, SO. OREG. TIMBER IND. ASSN.
1060	MARK SWISHER
1061	IRENE BRADY
1062	STAN KRUTE
1063	WINNIE MILLER
1064	DOUG FRANK
1065	JAMES FLETT
1066	DAVID KOUBECK
1067	SAM AND PAT ALVORD
1068	JACK BROWN
1069	HOWARD CLAASSEN
1070	ANNE FOLEY
1071	LORRAINE SARK
1072	CHARLES DAVIS

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1073	R.E. MILLER SR.
1074	BOB MILLER JR.
1075	RICHARD AND KARNE PEREZ
1076	TYRRELL HAART
1077	RIK JENSEN, MT. SHASTA RES.COUNCIL/ AUDUBON
1079	LARRY CROTHERS
1080	MIKE VATOFF
1081	DIANA BEAR
1082	ALLEN MAARSH
1083	SCOTT SUMNER
1085	BILL BALFREY
1086	MARJORIE FRANK
1087	\SCOTT HANSON
1088	KATE WILLIS
1089	FRED
1090	MELVIN JONES
1091	DENNIS PHILLIPS
1092	BARBARA COATES
1093	GLEN ARDT, NATIONAL AUDUBON SOCIETY, KLAMATH BASIN CHAPTER
1094	BILL WOOD, SIERRA CLUB, KLAMATH GROUP
1095	JIM ETCHISON
1096	ELAINE REES
1097	ROY AND FAYE FORD,SR.
1098	JOHN WARD
1099	TOM HARRIS, PNW FOUR-WHEEL DRIVE ASSO.
1100	FRANK VAUGHN
1101	DIETER MAHLEIO
1102	CRAIG MILLER, NATIONAL AUDUBONSOCIETY, CENTRAL OREGON CHAPTER
1103	JIM LYNCH, LYNCH BROTHERS
1104	DON TRYON, ORE. NATURAL RESOURCES COUNCIL
1105	CON FITZGERALD
1106	FORREST COOPER
1107	JUDGE DALE WHITE, HARNEY COUNTY COURT
1108	BILL MOSER
1109	PERRY STILL
1110	WAYNE PRUETT, ROARING SPRINGS RANCH
1111	FRED OTLEY, OTLEY BROS. INC.
1112	TOM DOWNS
1113	KENNETH BENTZ
1114	JIM \\SITZ
1115	BILL WEARE, OREGON TROUT
1116	ED DAVIS, TOM J. DAVIS LIVESTOCK INC.
1117	LARRY AND VIRGINIA KRIBS, DESERT DOG MINES
1118	NEAL NELSON
1119	MELVA MCLEAN, OREGON END RANCH
1120	DON ORLANDO, ORLANDO TROUT CK. RANCH
1121	NEL BOSCH
1122	MARJORIE SHULL
1123	BETTY KRAMER
1124	JULIET ROBERTSON, NATIONAL AUDUBON SOCIETY, CENTRAL OREGON CHAPTER
1125	JOYCE ANDDEAN DRURY
1126	ALN TRACY
1127	SUSAN ANDERSON
1128	MARJORIE TURNER
1129	GERTRUDE DEMERGUE
1130	ROB GUTTRIDGE
1131	LAWSON LEGATE, SIERRA CLUB
1132	BOB MAID
1133	KELLY SMITH, SIERRA CLUB, OREGON CHAPTER
1134	STEPHEN THOMPSON
1135	RANDY AND PAMELA DRAKE, DESCHUTES COUNTY4-WHEELERS

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1138	EIC SCHULZ, CENTRAL OREGON FLYFISHERS
1139	GORDON FILDEBRAND, SHERMAN COUNTY COURT
1140	BPB BOYNTON
1141	KAREN BIZELL, COMM. FOR IDAHO'S HIGH DESERT
1142	JANE LEESON
1143	TOM MENTEN
1143	JACK TRUEBLOOD, IDAHO SPORTSMEN'S COALITION
1144	ROBERT TYLER
1145	EDWARD ROBERTSON
1146	WENDY WILSON, IDAHO CONSERVATION LEAGUE
1147	NDALL MORRIS, COM. OR IDAHO'S HIGH DESERT
1149	BRENT KNAPP
1150	BRIN SCHAEFFER
1151	EDWINA ALLEN, SIERRA CLUB, MIDDLE SNAKE GROUP
1152	TED WEIGOLD
1153	STEVE JAKOBOWICS
1154	JOHN ALLEN
1155	MARTIN RUST II
1156	TOM WHITTLE, MCDERMITT MINE
1157	FRANKK MCCAMBRIDGE
1158	DENNY JONES, DEJONES AND SON, INC.
1159	NORMAN LODGE
1161	ROBERT SKINNER, OREGON CATTLEMEN'S ASSOC.
1162	DONALD DIRKSEN, OREGON FARM BUREAU
1163	MARK WILK
1164	SAM SHAVER, FUR TAKERS OF AMERICA, EASTERN OREGON FURTAKERS
1165	GARY SMITH, MALHEUR CO.CATTLEMEN'S ASSN.
1166	DUNCAN MCKENZIE
1167	DICK HENTZ
1168	TIM LILLEBO, GRANT COUNTY CONSERVATIONISTS
1169	TRUMMAN CARTER
1170	HERB CURRY
1171	ED TRINDLE
1172	FRAZIER
1173	TRISA HOFFMAN
1174	LOREN HUGHES, IZAAK WALTON LEAGUE, OREGON DIVISION
1175	NORM CIMON
1176	STUART CROGHAN
1177	BILL ALEXANDER
1178	RIC BAILEY, EARTH FIRST
1179	TIM LILLEBO, OREG. NATURAL RESOURCES COUNCIL
1180	RICK GEORGE, OREGON TROUT
1181	PRISCILLA COE, GRANDE RONDE RESOURCE COUNCIL
1182	STEPHEN DONNELL
1183	CLAIRE PUCBY, NATIONAL AUDUBON SOCIETY, PORTLAND CHAPTER
1184	JEAN DURNING, THE WILDERNESS SOCIETY
1185	JAMES MONTIETH, OREG. NATURAL RESOURCES COUN.
1186	ERNST MASSEY, WILLAMETTE VALLEY SOARING CLUB
1187	JOHN HAMMOND
1188	CHARLES CHRISTENSEN, WILLAMETTE VALLEY SOARING CLUB

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1189	LINDA CRAIG
1190	BILL BAKKE, OREGON TROUT
1191	KELLY SMITH, SIERRA CLUB, OREGON CHAPTER
1192	LOIS SHULL
1194	RUTH ROBBINS
1195	STANLEY JEWETT JR.
1196	JOHN DEAN
1197	SUSAN CAMPBELL
1198	DANIEL SHERMAN
1199	MARTHA VAIL
1200	MYRON JAMES
1201	LARRY SVART
1202	VERA DEFOE, AMERICAN ALPINE CLUB, OREGON SECTION
1203	KENNETH KEATING, LOWER COLUMBIA CANOE CLUB
1204	JULIE KIERSTEAD, NATIVE PLANT SOCIETY OF OREGON
1205	MARJORIE WILLIS
1206	TRYGVE STEEN
1207	PETER RAVELLA
1208	PETER STOEL
1209	RICHARD BROWN
1210	DALE GROETSEMA, NORTHWEST RAFTERS ASSN.
1211	BRUCE HANSEN
1212	BILL HOFFMAN, SIERRA CLUB, OREGON CHAPTER
1213	AMANDA PUNTON
1214	NEIL HANSEN
1215	JOE WALICKI, NW WILDERNESS TRAVEL SERVICE
1216	LEE BARAN
1217	TONY GEORGE
1218	ELIZABETH WILSON
1219	ANTHONY MENDOZA
1220	MICHAEL HOUCK
1221	PAUL NORMAN
1222	JOSEPH MORSE
1223	CHARLENE SIMPSON, NATIVE PLANT SOC. OF OREGON, EMERALD CHAPTER
1223	JEFF HAUN
1225	JIM NUGENT
1226	HAROLD DUNN, OREG.COUNCIL OF ROCK-MINERALS
1227	RHODA LOVE, NATIVE PLANT SOCIETY OF OREGON
1228	JONNE GOELLER
1229	CHESTER WILSON, NATIVE PLANT SOCIETY OF OREGON, EMERALD CHAPTER
1230	MARK RINGSDOF
1231	JAMMES FAIRCHILD, NATIONAL AUDUBON SOCIETY, CORVALLIS CHAPTER
1232	KIT LARSEN
1233	GWYNNE SCHULTZ, NAIONAL AUDUBON SOCIETY, LANE COUNTY CHAPTER
1234	TIM ODELL
1235	BILL HOFFMAN, SIERRA CLUB, OREGON CHAPTER
1236	DEITER MAHLEIN, SIERRA CLUB, MANY RIVERS GROUP
1237	ROGER SAMELSON
1238	JOHN ALBRECHT
1239	JOHN EBNER
1240	CHARLES WASON, JR., NW OUTDOOR RECREATION ASSN.
1241	JAMES LEBRET
1242	TOM WHITTLE, MCDERMITT MINE
1243	EVAN ZIMMERMAN
1244	DAVID NELSON, TEXACO USA
1245	GREG EBNER

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1246	ROSE STRICKLAND, SIERRA CLUB, PUBLIC LANDS COMM.
1247	DENNIS GHIGLIERI
1248	TOM SEWALL, SELWAY WILDERVENTURES LTD.
1249	MAGGIE CONLEY
1250	ALLEN HAMMER
1251	CHARLES BAGLEY, JR., NORTHWEST CANCER CENTER
1252	REED SECORD
1253	MIKE MCALVAGE, COOS CURRY COUNCIL OF GOV'TS
1254	JIM LEBO
1255	MICHAEL ROY ROE
1256	DICK HARLOW
1257	THOMAS SMITH
1258	RUTH ACORD
1259	DALE HILL
1260	LORI BENNETT
1261	DORIS OLDS
1262	LORI BENNETT
1263	JIM MYRON
1264	GEORGE STUBBERT, OREGON DEPT. OF AGRICULTURE, SOIL & WATER CONSERVATION DIV.
1265	SUSAN COX
1266	MARIAN ROBERTS
1267	KAREN ULLIAN
1268	J. EDWARD HENRICKS
1269	JIM AND CHERYL SHOTWELL
1270	SHAUNA MCCARTY
1271	STANLEY JEWETT, JR.
1272	MR. AND MRS. LOYAL HOWER
1273	M.J. HOLTZCLAW, CHEVRON RESOURCES CO.
1274	JILL ROBERTSON
1275	FRAZIER NICHOL
1276	BARRY GREER
1277	VIRGINIA SCOTT
1278	PAUL POORMAN
1279	DOROTHY AND GORDON STONE
1280	RICK AND CAROL REECE
1281	WENDY FULLERTON
1282	DAVID SHERMAN
1283	GERRY GRIFFIN
1284	JIM MYRON
1285	DANIEL SCHOFIELD
1286	BRENDA SCHOFIELD
1287	M.R. DARBY
1288	GARY AND ELRITA MANSFORD
1289	LEWIS WEAVER, WEAVER CATTLE CO.
1290	GRETCHEN RANDOLPH
1291	LARRY COOPER
1292	M.J. AND D.B. WESSLER
1293	LYNDEL GRIFFIN
1294	CATHERINE FISH
1295	KENNY CRONER
1296	SUSAN COX
1298	STEVEN TICHENER
1299	BRUCE HAYSE
1300	SUSAN BRODE
1301	KAREN SALLEY
1302	FRED CALEF
1303	BARRY CLOCK
1304	S. R. REESE
1305	LARRY LAITNER
1306	JOAN PAULK
1307	RICHARD OLESON
1308	PATRICIA PAULK
1309	CATHERINE NOLLENBERGER
1310	JUDY GERLOCK
1311	CLIFFORD LANSDON JR., SUPERIOR LUMBER CO.
1312	JERRY WHITLEY
1313	HARVEY REED
1314	JAN TAYLOR
1315	BRUCE ULMER
1316	R. ROHL
1317	JOHN MORGAN
1318	LONNIE HARRISON
1319	MARTIN VELEZ
1320	PATRICIA HONEYCUTT-MOEN, IZAAK WALTON LEAGUE OF AMERICA, PUBLIC LANDS RESTORATION
1322	RICHARD JALI
1323	JOHN PARRY
1324	STANLEY MARCHINGTON
1325	KEITH COMSTOCK
1326	BROOKSIE WILSON
1327	HOWARD BACH, NORTHWEST BROKERS, INC.
1328	SUSANNA DEFAZIO
1329	DON GETTY
1330	WILLIAM AND DIANE MEYER
1331	SCOTT HAMPSON
1332	ANDREA SUE LLONA
1334	ROY LICHTENSTEIN
1335	RALPH TOWNSEND, IDAHO AIR NATIONAL GUARD, 124TH TACTICAL RECON GROUP
1337	ROBERT AND MARGARET WEIR
1339	ROD MINU
1340	MARK CARTER
1341	JIM GOODWIN
1342	KEITH WALRATH, PACIFIC POWER & LIGHT CO., TRANSMISSION ENGINEERING
1343	M. MCGINNIS
1344	FRANK VAUGHN
1345	HAROLD AND YVONNE COFFELT
1346	CARL AND JOANN WEAVER
1347	JIM MYRON
1348	ERIC JOHNSON
1349	ALVIN GRIFFIN
1350	ROBERT AND FRANCES ROGERS
1351	MARY ELLEN SINCENEY
1352	WALTER AND DOROTHY PELECH
1353	WILLIAM ERDAHL
1354	PATRICK PILCHER
1355	GEORGE BLOUNT
1356	DONALD ELLSWORTH
1357	CONNIE HENDRICKS
1358	JERRY JAYNE
1359	SARAH CRAWFORD
1360	NORM LAVERY
1361	LORIN SHERBURN, PUEBLO/LONE MT. GRAZING ASSOC.
1362	ROBERT DUNSON
1363	ELIZABETH AXTELL, EUGENE MINERAL CLUB
1364	HUDSON STAVCLIFT
1365	AL RANKIN
1366	MRS. GENE WHITE
1367	RAY SHAW
1368	DON SCHOFIELD
1369	DAVID BURCOMBE
1370	TIM ADSIT
1371	ALVIN O'CONNOR
1372	JAMES STEVENSON
1373	MERRITT AND JEANNE HICKSON
1374	TRENT AND LUCILLE NEWCOMB
1375	GEORGE MARTIN
1376	BOB KOOKEN

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1377	LARRY KIRKPATRICK
1378	ELLEN TRUEBLOOD
1379	SALLY SANDLER
1380	BILL THOMPSON
1381	CATHY VERRET
1382	TONY HENDERSON
1383	RAYMOND CROSS
1384	ANDREW NEILL
1385	LARRY ADAMS
1386	WILLIAM NEWBY
1387	MARION GALLAHER
1388	CHARLES NEAVOLL
1389	DAVID DANIELS
1390	GARY WINSLOW
1391	ALAN AND MYRA ERWIN
1392	LOUISE ULRICH
1393	JIM BENDER
1394	STEVE ALLORD
1395	RODNEY HAMMAGREN
1396	JACK COLEMAN
1397	D'ARCY BANISTER, BUREAU OF MINES, WESTERN FIELD OPERATION CENTER
1398	JOHN CUNNINGHAM
1399	STANLEY BIRD
1400	ED UDLINEK
1401	ROZETTA TOTLAND
1402	G. M. GERITY
1403	CRAIG AND DIANA PLAHN
1404	LEROY PARRIS
1405	ROBB BELL
1406	J. MILLER JR.
1407	GEORGE BALL
1408	SHARON SCADDEN
1409	MARVIN SCADDEN
1410	ANNA NORTON
1411	IVAN WEDAN
1412	KENNETH NORTON
1413	E. W. PATERSON
1414	GREG MORSE
1415	ELAINE REES
1416	NORMAN PARRISH
1417	MR. AND MRS. WENDALL NEASHAM
1418	KYLE WALDEN
1419	PAT HARRIS
1420	ONTON KAMINSKI
1421	RICHARD PATTEN
1422	HERBERT LUARCA
1423	RICH HALLEY
1424	KIMBERLY HUNT
1425	MARVIN UDLINCK
1426	HARLEY AND IONE SCHAEFFER
1427	GREGORY CUTSFORTH
1428	BRENT KNAPP, SP. 4
1429	CHRIS ADSIT
1430	ROBERT BERRY
1431	MARY BERRY
1432	DAVID JOHNS
1433	RICHARD BARNES
1434	ROBERT BARNES
1435	RON EAMON
1436	MIKE AND JULIE BIRCH
1437	ED BENNETT
1438	JEFF NEASHAM
1439	WAYNE GOODE
1440	BERT BERLIN
1441	ANNE DRYAD
1442	MRS. RUTH JOHNSON
1443	DONALD NELSON
1444	JEFF JOHNSTON
1445	THOMAS VESELY
1446	MARK MELGARD
1447	HERBERT BARNES
1448	BERT KLEINER
1449	JAMES LOVEWELL
1450	JAN HAYDEN
1451	VIRGINIA GOW
1452	ED AND CATHY RAMSAY
1453	EARL RIST
1454	STUART FLEMING
1455	JEFF THIERET
1456	DAVID TURNER
1457	ALLAN SCHWINDT
1458	JAMES SMITH
1459	ELEANOR VAN HOY, NEWBERG GEM & MINERAL SOCIETY
1460	MR. AND MRS. EDWARD SPRING
1461	PHILIP AND WINIFRED HEID
1462	JAN KRABBE
1463	DOYLE WINSTON
1464	LEWIS HOWARD
1465	CAROL LYSEK
1466	PAULINA ELEMENTARY SCHOOL
1467	JEFF HAGEDORN
1468	JOHN CHRISTISON
1469	BOB ELLIOTT
1470	DAVE WILLIS
1471	ROY BENSON
1472	CLAUDE BABB
1473	R. MARRINER ORUM
1474	FRANK GOULD
1475	WILLIAM SEFLER
1476	SCOTT FORRESTER
1477	DALE JORDAN
1478	SUSANNE JORDAN
1479	HAROLD BATHSCHELDER
1480	NORMAN AND BEVERLY AND ALBERT FISHER
1481	BOB GUSTAFSON
1482	BRUCE PHILBRICK
1483	CATHY STERBENT
1484	KERRY HOLMAN
1485	STEVEN ALBERT
1486	MR. AND MRS. EDWARD SPRING
1487	JAMES AND CONNIE MCMILLIN
1488	ART ENDERSEN
1489	JERRY AND JUDY DEORNELLAS
1490	MARTIN ALBERT
1491	BILL AND ANITA STOLLER
1492	MERRILL WEYERHAEUSER
1493	ALBERT KELLEY
1494	BARBARA DZURO
1495	PAUL AND DORLAND MATHENY
1496	HAROLD CHRISTIANSEN
1497	CURTIS BELL
1498	MR. AND MRS. L.G. MONROE
1499	BETTY OTLEY
1500	DONNA WAYLAND
1501	OWEN OLSEN
1502	INEZ WAYLAND
1503	BARBARA BEAN
1504	TERRY BROCK
1505	WILLIAM RENWICK
1506	DIANA WALES
1507	RALPH SNYDER
1508	LYLE HOUSE
1509	TOM GAUMER

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1510	BILL BURCHETT
1511	DEBI LAUGHLIN
1512	HERSCHEL ELARTH
1513	JERRY WITKOWSKI
1514	JAN VLECK
1515	DENNIS WILKINSON
1516	TIM MASON
1517	TERRI GONZALEZ
1518	JEAN PAULK
1519	SCOTT WESTON
1520	LARRY TITUS
1521	JERRY DRAKE
1523	JOHN HARTLEY
1524	DONALD AND MAE BROWN
1525	SANDY PRICE
1526	TAYLOR MCCLAY
1527	LESTER ROOKSTOOL
1528	ALVA ELOCK
1529	CURTIS HICKMAN
1530	KEITH MASSIE
1531	GREGORY PARSONS, MAZAMAS, CONSERVATION COMMITTEE
1532	FORREST AND VALERIE TAYLOR
1533	AL HENRY
1534	DAVID AND PATRICIA SULLIVAN
1535	C.E. FRANCIS
1536	JAMES LUSBY
1537	HAROLD HUNT
1538	L.M. MEEKS
1539	DEAN WELLS
1540	FREDDIE WAYLAND
1541	PHILIP JOHNSON
1542	RICHARD JENKINS
1543	MR. AND MRS. W.B. NEWBY
1544	ROBERT PARKER
1545	JOHN SCOVILLE
1546	JAMIE STEWART
1547	GREG SOLARZ
1548	WARREN NEERS
1549	STEVE HORVATH
1550	JOANNE STONE
1551	W. STEVEN COLE
1552	KEN KLEMKE
1553	ART THOMAS
1554	TERRI LEE
1555	GARY MULVEY
1556	MAURICE CHAPPEL
1557	ANNE GUTCHES
1558	KEVIN KLINK
1559	JERRY HARAM
1560	ESTHER RAMSAY
1561	DARYL AND SALLY ACHLEY
1562	WILLIAM HAMILTON
1563	BONNIE VIEIRA
1564	ANN KENNEDY
1565	LILLIAN AND M.B. MEGLASSON
1566	PETER SHEARER
1567	STEVEN SCHULTHERS
1568	JUANITA WOODS
1569	E.J. DAY
1570	JACQUES FOREST
1571	JOHN POTTER
1572	CRAIG BRADLE
1573	T.J. CLEMENS
1574	JOHN AND SUSAN DEAN
1575	VIOLET KOEHN
1576	FLORA HARRIS

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1577	STEPHEN HARRIS
1578	JOHN VAN METER
1579	GREG WEIER
1580	GARRY VALEREE
1581	KATHERINE WITT
1582	KAREN HEIL
1583	STEVE AND JACKIE HERYFORD
1584	JEAN KORTE
1585	STEVEN TICHENOR
1586	WILLAM HERZ
1587	RICHARD AND ERNESTINE BLOOMBERG
1588	JERRY SCHOEFFER
1589	ROBERT GRAHAM
1590	TOMMY HARRIS
1591	JOHN HARVILLE
1592	ARDEN BENSON
1594	EVERETT RICHARDS
1595	LAWRENCE SMITH
1596	JOHN NEASHAM
1597	HARRY AND DORRIS TURNER
1598	JOSEPH LEVAY, MANVILLE PRODUCTS CORP.
1599	FRANK MASSINGALE
1600	PHILIP AND AGNES GRENON
1601	GARY KLINK
1602	EVELYN ELKINS
1603	JOY MCDOWELL
1604	G.R. HERMACH
1605	L.L. STEWART
1606	VIRGINIA COEN
1607	NANCY BURFORD
1608	FRANK NORRIS
1609	V.A. COOK
1610	MIKE ANDERSON
1611	MICK CATES
1612	JAY JONES
1613	DAVE STORDEUR
1614	MARY SWEENEY
1615	DENNIS BIRENBAUM
1616	PHYLLIS MOTTOLA
1617	DONALD HARP
1618	DARWIN SABIN
1619	PATRICIA PAULK
1620	THELMA DUVINAGE
1621	CELIA LINDBLOM
1622	MARK JOHNSON
1623	ROBERT RUSSELL
1624	MITCHELL HARRIS
1625	PETER STOEL
1626	R.W. HINDS
1627	PETE YAMAGATA
1628	GATLIN MITCHELL
1629	JANET AND LEROY YOUNG
1630	CHRISTINE LIPSCOMB
1631	PHILIP WHITE
1632	MARLA MARVIN, WISE
1633	PETE ONEIL
1634	MAURINE STUBBS
1635	RICHARD NORTH
1636	RONALD SHORT
1637	PATRICIA BENJAMIN
1638	KENNETH GORMAN
1639	DAVID KING
1640	JOHN SUTHERLAND
1641	DELER ROSS
1642	DAVID HAUGEBERG
1643	DONALD PHILLIPS
1644	BONNY SCOVELLE

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1645	JUDY ELLI
1646	ELEANA ADELMAN
1647	D. BERNARD ZOLEHA
1648	SAM LOFTIN
1649	NEAL NELSON
1650	CASSANDRA AND DAN AUERBACH
1651	BLAIR HAMPSON
1652	RUDY LUKEZ
1653	DALE WHITE
1654	ROGER DUNNIKOO
1655	D. PITTMAN
1656	R.L. RABER
1657	TOM RADCLIFFE
1658	CHARLES JAKEWAY
1659	RANDY WHITING
1660	D.A. AND TEDDE HOLCOMB
1661	RALPH AND MERLE WEIL
1662	DAVID CRIMP
1663	DAVID ETCHART
1664	JUANITA MAYFIELD
1665	R. INMAN
1666	BILL MARLETT, OREGON TROUT
1667	JACK HEINEMANN
1668	PAT SIEGNER
1669	KEITH SCHAETTLY
1670	R.W. VAN ALSTYNE
1671	RICHARD BRAINERD
1672	DAVE WILLIS, SODA MTN. WILDERNESS COUNCIL
1673	B. JUNE BABCOCK
1674	RON WRIGHT
1675	ALFRED GUNIM
1676	DAVID HALL
1677	STEVE WARBLE
1678	DANIEL MURPHY
1679	JOE HEBERT
1680	MANUELA HUSO
1681	LARRY SVART
1682	G.R. BAKER
1683	J. TIMOTHY SCOVILLE
1684	MIKE BEEKS
1685	RUTH KOEHLER
1686	GOLDIE AND RUBEN PETERSON
1687	ERIC SCHULZ, TROUT UNLIMITED, OREGON COUNCIL
1688	FRED MEINER, IZAAK WALTON LEAGUE, EUGENE CHAPTER
1689	HUGH CURRIN
1690	CHARLES PUTMAN
1691	JOHN BLAKE
1692	FRANK DEDERICK
1693	DAN GILMAN
1694	DEAN PETTY
1695	CHARLES BELUSKO
1696	KRIS WORHERT
1697	ARLIE OSTER, HARNEY COUNTY SHRINE CLUB
1698	KEN DECIO
1699	NEIL ALLEN, AMOCO PRODUCTION COMPANY, DENVER REGION
1700	WILLIAM ANDERSON
1701	ADEAN MACKENZIE
1702	DUNCAN MACKENZIE
1703	RONALD CUNNINGHAM
1704	GAIL ACHTERMAN, STATE OF OREGON
1705	DEPT. OF ENERGY, BPA
1706	SCOTT ASHCOM, OREGON FARM BUREAU
1707	JEAN DURNING, WILDERNESS SOCIETY, NORTHWEST REGION
1708	LEVERETT CURTIS
1709	HOWARD WEST
1710	JAY LENSCH
1711	RON WHITING, HARNEY COUNTY STOCKGROWERS
1712	DICK MICKA
1713	DAVID HARDESTY
1714	HENRY PAVELEK, NORTH AMERICAN TRUFFLING SOC.
1715	DANIEL SCHOFIELD
1716	JAMES KIMBALL
1717	JEFFREY CROOK
1718	BRUCE MCCULLOUGH
1719	ROBERT RUBOTTOM
1720	CRAIG MARKHAM
1721	PAUL ALBERTSON
1722	DEL PHELPS, CITIZENS FOR PERPETUAL RESOURC
1723	JOHN FOSTER
1724	RONALD KRANICK
1725	LARRY ULRICH
1726	LARRY ULRICH
1727	DON PANKY
1728	DAVID PARKER
1729	MARC PREVOST
1730	DIANA BRADSHAW
1731	MRS. JOHN BARRY
1732	WALT WEBER
1733	SUSAN MARKLEY
1734	CHARLES COLLMAN
1735	KELLY SMITH, OREGON HUNTER'S ASSOCIATION
1736	STEPHEN BROWN
1737	MIKE DALESSI
1738	KEN AND KIM WIENKE
1739	DIANE ELDER
1740	TERRY CAIN
1741	ROBERT MESSINGER, BOISE CASCADE, NE OR REGION TIMBER & WOOD G
1742	JIM LIVERMORE
1743	LLOYD KNAPP
1744	LARRY AND LINDA HILLIGOSS
1745	FAYE FORD
1746	CLEM STOCKARD
1747	MELVIN JONES
1748	DAN BISHOP
1749	BILL ROSE
1750	MARY WALTER
1751	MR. & MRS. MERLYN JAVENS
1752	PETE WYMAN
1753	CASSANDRA BOTTS
1754	BETTY DODSON
1755	MIKE GARRETT, HIGH DESERT TRAIL RIDERS
1756	JAMES GILLAM
1757	MARY BETH BONTE
1758	PETER BAHLS
1759	KENNETH CAPPS
1760	MICHAEL GETTY
1761	DENNIS CURREN
1762	MARK WILK
1763	GLEN VAN CISE, CENTRAL OR AUDUBON CHAPTER
1764	PATRICIA JENKINS
1765	BRUCE AND LESLIE SARGENT, SODA MT. WILDERNESS COUNCIL
1766	DIANE SODER
1767	MONA AND HOWARD BISHOP
1768	B.L. KAUFMAN, CROMAN CORP.
1769	KELLY SMITH

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1770	CLIFFORD MORSE
1771	ROBERT KONO
1772	S.R. MARK
1773	BILL HELPHINSTINE
1774	JAVIER GOIRIGOLZARRI, SNOW MT. PINE CO.
1775	C.L. AND C.E. MARTINEZ
1776	BRUCE WRIGHT
1777	ERNEST O'BYRNE
1778	TED AND LOIS SALLEE-SCHEALL
1779	RICHARD SADLER, COPELAND LANDYE BENNETT & WOLF
1780	TONY GEORGE, SHEEPSHEAD PROTECTION GROUP
1781	GERALD OTTONE
1782	RUSS JOLLEY
1783	GORDON THOMPSON
1784	MARVIN MOORE
1785	DALE TUTKOWSKI
1786	ALAN TRACY
1787	KEN LUND
1788	DONALD PURINTON
1789	CHARLES BLAKESLEE
1790	BOYD PETERS, HEADWATERS
1791	THOMAS SEDDON
1792	JOHN BARRY RANGE ECOLOGY GROUP
1794	WILLIAM WOOD
1795	WILLIAM LYNN
1796	JULIE RECHTIN
1797	KENNETH MACKLIN
1798	SUSAN NASH
1799	STEPHEN THOMPSON, JR.
1800	DAVID ERION
1801	WILLIAM HILLIGOSS
1802	EVA JEAN MUCHNICK
1803	MILTON GORDON
1804	ELIZABETH CAMPBELL
1805	JOANN LANG CAUDILL
1806	ROBERT AND RUTH ZELLER
1807	RICHARD FIDDLER
1808	JOE AND ADRA CABELL
1809	DAVID HAVILAND
1810	FANNIE LEE FORD
1811	RICHARD HIERS
1812	ED CISEK
1813	KATHLEEN CRISP
1814	GRETCHEN BIGGS
1815	RAY PEARL
1816	TYLER GROO
1817	LAWSON LEGATE, SIERRA CLUB, OREGON CHAPTER
1818	BARBARA FERGUSON
1819	LAURA FLETT
1820	SIDNEY HIRSH
1821	SUE JOERGER, S. OR TIMBER INDUSTRIES ASSOC.
1822	MAURICE CHAPPEL
1823	RICHARD CONRAD
1824	RONALD STOCKHOFF, OR COUNCIL OF ROCK & MINERAL
1825	BRUNO MEYER, MEDFORD CORP.
1826	RAMONA OSBURN
1827	RONALD YOCKIM, PRAIRIE WOOD PRODUCTS
1828	LEONA SEXTON
1829	DAN AND ESTHER LEIS
1830	R.E. CROSS
1831	DON AND VIOLET HURLBURT
1832	LEON WOODS

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1833	CALVIN HAMERLY
1834	WILBUR DEHNE
1835	JOHN BAUER
1836	ROD MUNRO, IZAAK WALTON LEAGUE OF AMERICA, PORTLAND CHAPTER
1837	RONALD AULER
1838	JEFF PAINE
1839	JAMES ARNESON, UMPQUA VALLEY AUDUBON SOCIETY
1840	RICHARD FOBES
1841	ROBERT HOYLMAN
1842	LEONARD SMITH
1843	SAM START SR.
1844	RONALD AND MELVA MCLEAN
1845	CLARK COLLINS, BLUE RIBBON COALITION INC.
1846	BERNARD ALTISHIN
1847	ROLAND BOYD
1848	BOB NISBET
1849	BILL SPEERS
1850	MICHAEL HOUCK
1851	VERA PARKER
1852	DAVID HAUGEBERG
1853	GERALD PARKER
1854	SUSAN DETROY
1855	NICHOLAS DODGE, AMERICAN ALPINE CLUB, CONSERVATION & USE COMMITTEE
1856	ROGER GARRETT
1857	OWEN SMITH
1858	DANIEL AND BARBARA CLARK
1859	MIKE AND CARRY SHOPE
1860	EARL DARROW
1861	WILLIAM AND DIANE MEYER
1862	RUBY CRAWFORD
1863	ROBERT HUGHES
1864	VINCENT WROBLE
1865	JOHN LOVE
1866	BOB GERL
1867	CHARLES AND GAIL WOOSLEY
1868	AMY ELSEMORE
1869	GARY GERL
1870	JOHN MCFARLAND III
1871	BRUCE DAVIS
1872	MARK MILLER
1873	GLENDA NAYLOR
1874	MARY LOU ROSCZYK
1875	DAVID KEISER
1878	ALLEN TAYLOR
1879	W.A. HALL
1880	CRAIG MCKERN
1881	THOMAS PLATT
1882	FRANK OVDRICEK
1883	DAVID PALMER
1884	DON NICHOLS
1885	LEE YODER
1886	GREG AND LINDA MORRIS
1887	ARDEN ERLICHMAN
1888	GARY SCOGGIN
1889	LUCILLE RAGO
1890	JAN TAYLOR
1891	MAUREEN KEILTY
1892	MILORED FINE
1893	JOAN DAVIES
1894	TOM SAVAGE
1895	GUY OLIVIA PIERUCCINI
1896	ROD HARDER, FURTAKERS OF AMERICA
1897	MARION GALLAHER
1898	ROGER GALKA

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1899	ORVILLE HOUSTON
1900	R.R. OUTLAND
1901	DICK DUFORD, OR STATE SNOWMOBILE ASSOCIATION
1902	DEAN LODER
1903	BILL TUCKER
1904	DERRY WELCH
1905	ROBBIE EARON
1906	JOAN STONER
1907	HENRY REINKE
1908	LOWELL YENTER
1909	LYLE AND ARLENE GOWING
1910	DAVID AND SHIRLEY KRAUSE
1911	AGNES WHITMAN
1912	PAUL PAULSEN
1913	J. SCOVILLE
1914	STEVEN TREMBLE
1915	RUTH GROVER
1916	MARTHA RENFROE
1917	RICHARD BEMENT
1918	W.D. GANGER
1919	CALVIN BRANTLEY
1920	MARK GAILEY
1921	TERRY TRENT
1923	RHONDA OSTERATAG
1924	BILL AND DIANE VANDASEN
1926	GEORGE OSTERTAG
1927	FRANK AND MIRIAM HUNNECUTT
1928	CHARLES KERSCH
1929	STEVEN DAGGET
1930	CLIFFORD LAUMAN
1931	JOHN BJERKE
1932	DONALD AND MRS. TEAGUE
1933	AUBREY JONES
1934	STEPHEN BATES
1935	AUDREY GRISEL
1936	CLAUDE OLSON
1937	FERN ROBINSON
1938	RUSSEL BRISTOW, TRAILS END GEM & MINERAL CLUB
1939	T.G. MACDONALD
1940	T.G. MACDONALD
1941	LEON SWARTZBERG
1942	T.G. MACDONALD
1943	MRS. TRIPLETT
1944	D.A. STRONG
1945	CHERRY GRIMM
1946	DIDA RAY
1947	BILL MELLOW
1948	GLADYS CROWLEY
1949	MICHAEL BALDWIN
1950	SANDRA CARNES
1951	CLIFF JUDSON
1952	TAYLOR RANDOLF
1953	GENEVIEVE ESTES
1954	SAMUEL AND MRS. VERNALLIS
1955	REUEL MYERS
1956	JANER ELDRIDGE
1957	JON SIRRIS
1958	MELISSA JONES
1959	E.C. DAVIDSON
1960	DAVID STONE
1961	JEFFREE HALL
1962	BILL MARSCHALL
1963	ARCH DIACK
1964	ANTONIO GARCIA
1965	RICH WILLIAMS

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
1966	EVERETT AND MRS. ENSOR
1967	PAUL MORGAN
1968	JIM WALKER
1969	ERNEST AND SADIE WALKER
1970	GEORGE AND BERNICE PACE
1971	WILLIAM DAVIS
1972	JERRY AND MARIANNA BRIDGES
1973	KURT KREMERS
1974	WALTER PHILLIPS
1975	CYNTHIA NELLIPOWITZ
1976	DAVID PUTNAM, GRIZZLY MTN. LONG RIFLES
1977	KEVIN RAFFERTY
1979	RICHARD GOLD
1980	LUCRETIA SMITH
1981	MARY BETH OMLOR
1982	LEONORD SMITH
1983	LARKETTE LEIN
1984	NANCY OESAN
1985	RICHARD BELL
1986	CHERYL MCGINNEY
1987	ANDREW GIDDEN
1988	JOHN AND JEAN SPECK
1989	PATRICIA REYNOLDS
1990	RIC HANCOCK
1991	JAMES MULLINS
1992	BRUCE KELLOWS
1993	STANLEY SHEPARDSON
1994	LAWRENCE MUELLER
1995	PAUL SWANSON
1996	J. KIDD
1997	VERNON AND DOROTHY TUTER
1998	MILDRED ESTRIN
1999	DON LEACH
2000	TED PEFORD
2001	GREG GRESTVARG
2002	CLAUDE TOMERA
2003	CHRIS WELCH
2004	WALTER AND MABEL NITZEL
2005	SCOTT KELLSTROM
2006	MIKE WILLHITE
2007	CLIFFORD AND MRS. CARTER
2008	MIKE GRAY
2009	AL STEWARD
2010	KENT COLAHAN
2011	GEORGE RUEGGER
2012	BETTY O'CONNER
2013	KAY BISBEE
2014	BEN PHILLIPS
2015	MARTHA STANLEY
2016	K. BARLOW
2017	MARY ZENTNER
2018	E. FIRED
2019	EDON ALSEED
2020	ROBERT EKLUND
2021	LOIS AND G.E. FROST
2022	WAYNE JOHNSON
2023	ESTELLA JOHNSON
2024	TIM HOAGLAND
2025	PETE CASEY
2026	TOM HALL
2027	GEOFF MERRITT
2028	MICHAELE FOWLER
2029	CLINT SIEGNER
2030	MITCH SIEGNER
2031	ELFREDA SWORD
2032	DORIS THORTON
2033	CHRIS HOAGLAND

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
2034	JAKE FOWLER
2035	JASON MERRITT
2036	WINSTON ZAY
2037	ROSA GARCIA
2038	HAROLD AND MRS. RETZLOFF
2039	JOAN DAVIES
2040	ORVILLE CHEEK
2041	BETTY CHEEK
2042	WENDELL GRONSO
2043	GARY WENICK
2045	CHRISTINE HODGES
2046	JOE AND SALLY HENDRY
2047	JAY AND PHYLISS MILLER
2048	ANTONE SCHIRO
2050	W.L. HUNT
2051	MATHEW MERRITT
2052	RICKY BUHRIC
2053	DONALD THOMASON
2054	JERRY CONLEY
2055	VINCE CARTER
2056	GUY PIERUCCINI
2057	ELDON CURREY
2058	LILLIAN CURREY
2059	JAMES MCKRIDY
2060	HOWARD OTLEY, KIEGER RANCH INC.
2061	DWIGHT AND ETHEL HINSHAW
2062	EUGENE HALLET
2063	DICK LEEVER
2064	ADRIANNA WEBER
2065	HERB AND MARGARET DEVRIES
2066	JOANNA PICCKI
2067	CHARLES GOLD
2068	MARK SCHOEN
2069	ARTHUR FARLEY, AUDUBON SOCIETY, LANE COUNTY
2070	GERILYN BAXTER
2071	LARRY TRUMBULL
2072	EVERETT NEBEL
2073	WAYNE KIDD
2074	BURTON HARRIS
2075	JOHN COOLEY
2076	MILDRED SCOVILLE
2077	TONY CONNOLLY
2078	FRANK AND MRS. POTJE
2079	PAUL AND BETTY CRIPPS
2080	HAL HUSHBECK
2081	DAWN SINNOT
2082	ANNE LEISER
2083	RUTH ENG
2084	JOHN HITCHCOCK
2085	CANDICE GUTH
2086	RUTH WAKE
2087	ED VLIEK
2088	JOHN EBELING
2089	RICK RASMUR
2090	WENDY HONIGRAN
2091	DOUGLAS SANDERS
2092	LARRY HEIL
2093	DAVID WILSON
2094	CLAY SPENCER
2095	RUSSEL FRANKEL
2096	DOUGLAS DUBOSQUE
2097	MICHAEL SCOTT
2098	LEO BABEU
2099	SCOTT SAMUELS
2100	KARIN PEARSON
2101	NANCY SHACKLETT

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
2102	DARA NEWMAN-SAMUELS
2103	KENNETH BUNKER
2104	ARTHUR NEWCOMBE
2105	ARNE WIDMAN
2106	GEORGE BRIDGES
2107	RON GUENTHER, SIERRA CLUB, REDWOOD CHAPTER
2108	ERIC EATON
2109	KARL BODENHOFER
2110	LARRY AND CAROLYN BOLLINGER
2111	LARRY AND CAROLYN BOLLINGER
2112	E. ZAHN
2113	NANCY NESEWICH
2114	JOE WALICKI, SIERRA CLUB, COLUMBIA GROUP
2115	MURIEL KING
2116	JOYCE FOLLINGSTAD
2117	JOHN AND KATHLEEN GORHAM
2118	ERIK FISHER
2119	DWIGHT HAMMOND
2120	LEONARD VAGLIA
2121	GEORGE HILL
2122	ROMAIN COOPER
2123	FRAN RECHT
2124	HENRY MILLER
2125	BETS STOVER
2126	JOHN WALENTA
2127	COLLINS HEMINGWAY
2128	GAIL MCALLISTER
2129	RUSSEL BECKER
2130	BRUCE NEALLEY
2131	KATHY THORP
2132	ANN WALSH
2133	DAVID LICHTER
2134	BONNIE BROWN
2136	ANDREW BUTLER
2137	DORIS ARGILE-JOHNSON
2138	SUE OTLEY
2139	JOHN CHURCH
2140	KEN GOODE
2141	STEVE GOELLER
2142	LEROY AND ELVINE GIENGERS
2143	R.L. BARLOW
2144	JOHN PAFLORD
2145	WESLEY HEIDENREICH
2146	STEVE WEBB
2147	MARK SILCOCK
2148	GLEN KIRCHER
2149	JOHN HUNNICUTT
2150	KATHY HURLEY
2151	DAVID REX
2152	PATRICIA MILLER
2153	GLADYS MARTIN
2154	KAREN WILSON
2155	GORDON WYLIE
2156	LEWIS WEAVER, WEAVER CATTLE CO.
2157	MARY ANNE FLETT
2158	M. EIFORD
2159	BYRON RENDAR
2160	JEANNE HUFFSTUTTER
2161	BOB POWNE
2162	DENNIS PHILLIPS
2163	JIM AND EFFIE PARSONS
2164	ROBERT MILLIGAN
2165	ESTHER MILLIGAN
2167	BARBARA MYERS
2168	ARNOLD RYLAND
2169	DON ALSUP

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
2170	SALI BORCHMAN
2171	A.V. AND EVELYN BABCOCK
2172	JOHN AND JEAN NATH
2173	MR. AND MRS. W.E. CARTER
2174	ANDRE JORGENSEN
2175	GORDON SLEDGE
2176	EARL REINERTSON
2177	JOHN SELBY
2178	DOUG HAVLINE
2179	PATRICK WARD
2180	MR. AND MRS. EVERETT ENSOR
2181	ALLENE DUNNE
2182	DORA PARROTT
2183	DOYLE PARROTT
2184	EMMETT ADAMS
2185	RON STROBEL
2186	RON CONNER
2187	MONTE DEHLINGER
2188	MIKE REYNOLDS
2189	DAVID HUMMEL
2190	MARVIN BLAND
2191	SHIRLEY STEWART
2192	GARY NICHOLS
2193	RON MASON
2194	WALT GENTIS, JOHN DAY LUMBER CO.
2195	WAYNE KENNEDY, WAYNE KENNEDY LOGGING
2196	MILDRED SCOVILLE
2197	JAY GOLDMAN, CIC INC.
2198	JOHN SCOVILLE
2199	BERT SOYLLR
2200	RON POOLE
2201	ROGER WINTER
2202	JOAN AND MILTON GOTTLIEB
2203	VALERIE SKAGGS
2204	ANDREW GIBSON
2205	ALICE NORK, GREGORY FOREST PRODUCTS
2206	BILL AND SUE BAILEY
2207	DAVID HARDIE
2208	FRANCES COX
2209	KRIS SAUNDERS
2210	WES JETLEY
2211	RICHARD GILCRIST
2212	STEPHANIE POOLE
2213	JAMES POOLE
2214	JUNE WOODRUFF
2215	RONELLE COX
2216	KEVIN AND SUZANNE RAFTERY
2217	LEROY COX
2218	R.D. MASSEY
2219	M. MARIE JETLEY
2220	MR. AND MRS. JOE NORK
2221	GLEN DAMROW
2222	BEN ROBINSON
2223	JACK SKILLING
2224	JOSEPH COX
2225	SUSAN BENNETT
2226	WILLIAM DOIG
2227	RUSSELL HUDKINS
2228	PAUL STUTZMAN
2229	MR. AND MRS. LOYD QUIMBY
2230	LEE FINDLEY
2231	JAMES COOK
2232	SHERMAN ANDERSON
2233	ALAN AND MYRA ERWIN
2234	RACHEL BALDWIN
2235	B.G. ROGERS
2236	DENVER SMITH

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
2237	WALTER AND DOROTHY PELECH
2238	HELEN DETOS
2239	ARTHUR BOESCHEN
2240	TONY GEORGE, CHEMEKETAN'S, CONSERVATION COMMITTEE
2241	SMITTS
2242	DICK RANTZ, NW FEDERATION MINERALOGICAL SO, PUBLIC LAND ADV. COMM.
2243	DIANE DEXTER
2244	WALT MINTKESKI
2245	RON SPOMER
2246	ANN AND JAMES JOHNSON
2247	MANNING HARRIS
2248	KRIS ELKIN
2249	MITCHEL ZIMMERMAN
2250	ELAYNE BARCLAY
2251	BECKY VESTAL
2252	FRANCES MCCARTER
2253	RICHARD WOODWORTH
2254	ALAN POWERS
2255	COL. GARY LOCKWOOD, OREGON ARMY NATIONAL GUARD
2256	HOWARD BAY
2257	JOHN SWANSON
2258	JEFFERY TEAGUE
2259	MICHAEL HORTON
2260	DON SCHALLER
2261	H. LARSON
2262	CHRIS FRESHLY
2263	MARVIN JOHNSON
2264	ALFRED AND KARLA KRAMPERT
2265	JOHN HAMMOND
2266	WILLIAM GILBERT
2267	JAMES MORGAN
2268	MARILYN MCGINNIS
2269	WILLIAM HARTMAN
2270	VERNON CARLSON
2271	RUSSELL PETERSON, US FISH AND WILDLIFE SERVICE, PORTLAND FIELD OFFICE
2272	DICK VANDER SCHAAF, THE NATURE CONSERVANCY
2273	MARTY GORMAN
2274	MAC CUNNINGHAM
2275	THEODORE DEWITT
2276	RON RETZLOFF
2277	GEORGE JOHNSON
2278	ROBERT DOAN
2279	LOREN LOVENESS
2280	BEN LOHF
2281	ELSIE LOVENESS
2282	PATSY CARLSON
2283	TIM BUCHMAN
2284	LORI BUCHMAN
2285	SHELDON MEYER
2286	T.C. DAEUBLE JR.
2287	DAN AND FLORIS ALLEN
2288	JOHN BENNETH
2289	ALLEN GRIFFIN
2290	MARION AND LAVERNE SCHNICK
2291	KEN AND KATHY BRINKLEY
2292	BENJ CANNON
2293	STEPHEN FINLAYSON
2294	STEPHANIE FINLAYSON
2295	JAMES PILCHER
2296	LARRY MILLER
2297	PAT HARRIS
2298	MARK YOUNG

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
2299	RICK LIEPITZ
2300	HELEN GUYTON
2301	PETER LEE
2302	DON ROOPER
2303	MARY POTTER
2304	LYNN JACOBS
2305	JOHN CHAPLICK
2306	WILLIAM CRAMER
2307	JOHN CAMPBELL
2308	TIMOTHY PEMBERTON
2309	ALAN AND MARY BUTLER-WATTS
2310	IONE ROBINS
2311	THOMAS DRYNAN, WILDLIFE SOCIETY, OREGON CHAPTER
2312	ED SARGENT
2313	MIKE MCCABE
2314	DEBRA KINKADE
2315	ED SARGENT
2316	HAZEL DOMAS
2317	CURTIS AND MARY DEJONG
2318	CONNIE HENRICKS
2319	LEROY RAMM
2320	CHARLES BLAIR
2321	BARBARA ARNOLD
2324	ED WIDMAN
2325	JANE FOWLER
2326	E DANSKY
2327	MICHAEL KELLMAN
2328	LOREN HUGHES SR, IZAAK WALTON LEAGUE OF AMERICA, UNION COUNTY CHAPTER
2329	DARRELL ESTES
2330	LAWSON LEGATE, SIERRA CLUB, OREGON CHAPTER
2331	JEFF LENDE
2332	ANTHONY BORRIE III
2333	JUDITH BEZY
2334	LARRY OTLEY
2335	REGINALD BRUMFIELD
2336	COLLEEN PERKINS
2337	GARY GIESBRECHT
2338	WILMA LOW
2340	GENE TIMMS, OREGON STATE SENATE, DISTRICT 30
2341	GENE AND MARY JO SCRIVNER
2342	L R SWARTHOUT
2343	MRS G N JAMESON
2344	GRECHEN NICHOLS
2345	MARY HOWDEN
2346	RAE-JEAN NEUMANN
2347	SANDY JO CASEY
2348	JOHN HODGES
2349	WILLIAM BEAL
2350	HEATH CLARK
2351	MRS THOMAS DRYSDALE
2352	HENRY YATES
2353	ELTA TAYLOR
2354	YONNA LACY
2355	BEN NEWELL, SILVIES CLUB
2356	WILSON LAY
2357	MARY DIXON
2358	JOHN MODDULL
2359	FERNE CAGLE
2360	DONALD WILLIAMS
2361	LAURIE PELLEGRINO
2362	LADELL SHERBURN
2363	DEL CLEMENS
2364	JACK HEASTON

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
2365	PAT NUGRATH JR
2366	JENNIE OTLEY
2367	TED AND PEARL PERRY
2368	JERRY AND JANET ARNOLDY
2369	ALTA SIEGNER
2370	KAREN AND JULLIAN URENGA
2371	LLOYD CULY
2372	CAROLEE WISAR
2373	CON SMITH
2374	CHARLES BRIDGES
2375	ELAINE SMITH
2376	ROBERT DETROIT
2377	D M HOLLIS
2378	BARBARA GIRDLER
2379	CAROLYN DAVIES
2380	GARY BRICKETT
2381	NANCY KOSTERLITZ
2382	LARRY AND LOUISE MORRISETT
2383	RICHARD BEMENT
2384	AUSTIN PELTIER
2385	JUDY HARDIE
2386	KENNETH DIXON
2387	M BOYSEN
2388	OIVA AND VIOLET WESMAN
2389	BEN AND MARGARET MURPHY
2390	DON MILLER
2391	JACK JOHNSTON
2392	TIM HALL, IBEX MINING CO
2393	RUSSELL MCCURDY
2394	KATHLEEN SHORT
2395	JOHN LINDER
2396	WILLIAM SCHRADER
2397	DAVID BROWN
2398	ROBERT ANDREWS
2399	FRED DEVITA
2400	DONALD WATKINS
2401	JAMES GERKING
2402	GERALD AND ALBERTA SMITH
2403	WILLIAM MAREAN
2404	VERNON ENGLAND
2405	JANE HARTLINE
2406	ALBERT CLARK
2407	CAROLYN WRIGHT, NATIVE PLANT SCIETY OF OREGON
2408	NORM AND CAROL WILLHITE
2409	KURT LAUER
2410	NEIL VERIGAN
2411	WILLIAM ZWEIG
2412	DAVID AND CHARLOTTE CORKRAN
2413	WM AND ANN BOYER
2414	G D MORRIS
2415	IRENE VEACH
2416	IRENE VLACH
2417	MARY LOU BOICE
2418	JOHN KUZMIAK
2419	DELORES GILCRIST
2420	JOHN PAMPERIN
2421	ROBERT MOSSMAN
2422	THOMAS COX
2423	HAROLD OTLEY
2424	MELANIE KIMBALL
2425	MR AND MRS DOUG HALL
2426	LEWIS AND LOIS HOSKINS
2427	KATHRYN HIESTAND
2428	GARY FORNER
2429	HOLLIE SCHROEDER
2430	BEATRICE SCHRODER

Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
2431	JULIE NORMAN
2432	MILDRED GRAVES
2433	REX TAYLOR
2434	CAROLYN DAVIS
2435	ALLAN OTLEY
2436	LINDA BEAL
2437	JAMES HOWARD
2438	FRAN ALDERTON
2439	RUSSELL ZIMMERMAN
2440	LARRY MILLER
2441	CONNIE HENDRICKS
2442	NEVIN THOMPSON
2443	DONNELL OTLEY
2444	BOB AND EDITH WORK
2445	RICHARD AND EVELYN DEJONG
2446	MRS LENORA NEIL
2447	ROBERT RUBOTTOM
2452	WILLIAM RING
2453	ROBERT BURD, WATER DIV., US ENVIRONMENTAL PROTECTION AGENCY, REGION 10
2454	BERT DENHAM
2455	CONNIE HENDRICKS
2457	S L HENDRICKS
2458	ROBERT RUBOTTOM
2459	PAUL PAULSEN
2460	RUBY BYERS
2461	LAWRENCE BROWN
2462	LEN RAMP
2463	T W MCGILL
2464	HAROLD HAUGEN, JOSEPHINE COUNY COMMISSION
2465	MIKE PEAL
2466	MARTIN BAUER
2467	STEVEN RICH
2468	JACK SIM
2469	CHARLES BARBER
2470	NANCY JOHNSON
2471	DON JOHNSON
2472	JOHN MAYFIELD
2473	JAMES PETERSEN
2474	SUSAN KOFAHL
2480	ALLEN EDWINA, SIERRA CLUB, MIDDLE SNAKE GROUP
2481	MORRIS RANDALL, COMMITEE FOR IDAHO'S HIGH DESERT
2482	POORMAN PAUL
2483	JAMES LEBRET
2484	STANLEY BARNES
2485	KAREN WILSON, MCDERMITT MINE
2486	LARRY SULLIVAN
2487	DAVID BUSH, CHEVRON RESOURCES CO
2488	MIKE HANLEY, OR AND OWYHEE CATTLEMEN
2489	JIM ANDERSON, MALHUER CO CATTLEMENS ASSOC
2490	OLIVER COLLINS
2492	DALE WHITE
2493	KEN BENTZ
2494	JAMES SITZ
2495	ED DAVIS
2496	HOYT WILSON
2497	HAROLD OTLEY
2498	WILL BROWN
2499	TOMMY HARRIS, PACIFIC NW 4X4 ASSOCIATION
2500	ARTHUR NEWCOMBE, OR COUNCIL OF ROCK & MINERAL
2501	FORREST COOPER
2502	FRANK VAUGHN
2503	WILLIAM KENNY
2504	VIVIANE SIMON-BROWN
2506	ALICE ELSHOFF, CENTRAL OR AUDUBON SOCIETY
2507	CARL WEAVER
2508	LAWSON LEGATE, SIERRA CLUB, OREGON CHAPTER
2509	D J VANCISE
2510	BILL MARLETT, OREGON TROUT, CENTRAL OR. FLYFISHERS
2511	DONALD TRYON
2512	HAROLD WINEGAR
2513	BETTY GRIMSHAW
2514	CRAIG MILLER
2515	JULIE KIERSTEAD, NATIVE PLANT SOCIETY OF OREGON
2516	JOHN HAMMOND
2517	DIANA BRADSHAW
2518	JEAN DURNING, WILDERNESS SOCIETY
2519	LINDA CRAIG
2520	STEVEN JAKUBOWICS, FRIENDS OF THE STEENS
2522	JOHN MARKS
2523	BLAIR HAMPSON
2524	GAIL ACHTERMAN, STATE OF OREGON, GOVERNOR'S OFFICE
2525	SAM GARRISON
2526	ERIC GRIMM
2527	GEORGE OSTERTAG
2528	CAROLYN ECKEL
2529	MICHAEL HOUCK, FRIENDS OF STEENS MT WILDERNESS
2530	PAUL KETCHAM
2531	KELLY SMITH, SIERRA CLUB, OREGON CHAPTER
2532	ELIZABETH WILSON
2533	RICHARD BROWN, AUDUBON SOCIETY, PORTLAND CHAPTER
2534	ELLEN MENDOZA, THE SAGE ADVISOR
2535	RUTH ROBBINS
2536	NANCY PETERSON
2538	DAVID HARDESTY
2539	JOHN FREWING
2540	DANIEL SHERMAN
2541	TRYGVE STEEN
2542	JOE WALICKI, SIERRA CLUB, COLUMBIA GROUP
2543	FRED DIVITA
2544	MICHAEL ROE
2545	JONNE GOELLER
2546	WENDELL WOOD
2547	JACK DESMOND, SIERRA CLUB
2548	BOB DOPPELT, OREGON RIVER EXPERIENCES INC
2549	KATHRYN HARNDEN
2550	NANCY MACHACEK
2551	ELLEN PLATT
2552	THOMAS PLATT
2553	CATHERINE STERBENTZ
2554	JAMES MITCHELL
2555	CECIL SAXON
2556	ARTHUR FARLEY, THE NATIONAL AUDUBON SOCIETY, LANE COUNTY CHAPTER
2557	JAMES LEBO
2558	RUSSELL MCKINLEY, BOISE CASCADE CORP
2559	LIZ SHELBY, MEDFORD CHAMBER OF COMMERCE
2560	CHARLES INMAN, SIERRA CLUB
2561	GARY POULOS
2562	MARK SWISHER
2563	VERN CRAWFORD
2564	STEVEN DIECKHOFF
2565	HARRIETT SMITH

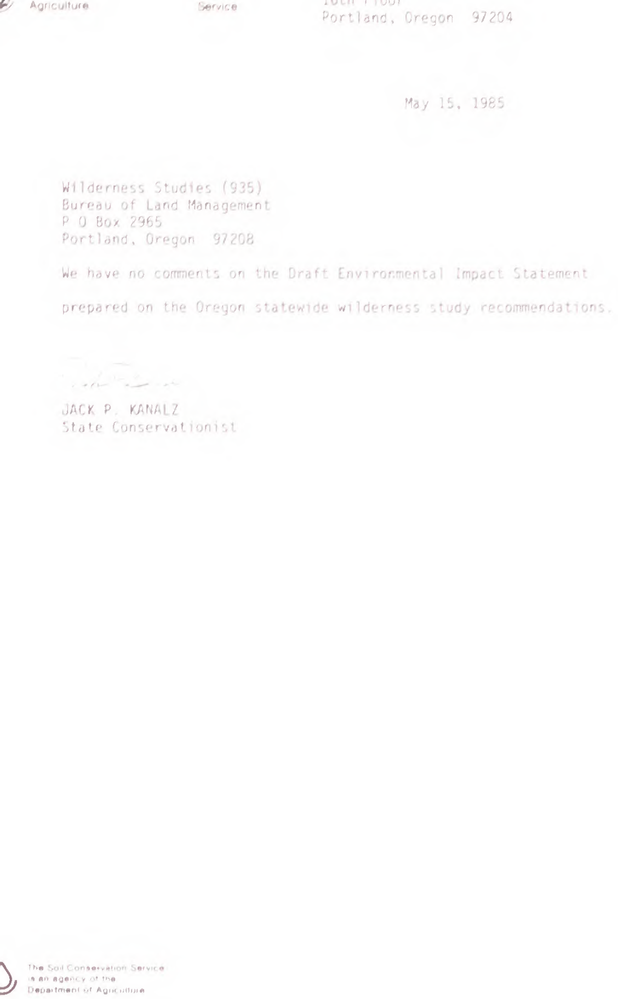
Table 5-1. List of Those Who Submitted Comments on the Oregon Wilderness EIS (cont.)

ID No.	Name/Organization
2566	PHILIP BRAUTIGAM
2567	BRUCE SARGENT
2568	JAMES TITUS
2569	DOUGLOUS FRANK, FRIENDS OF THE GREEN-SPRINGS
2570	LAURA FLETT
2571	RICHARD PEREZ
2572	JEFFREY GILMORE
2573	GEORGE BLOUNT
2574	NANCY BLOUNT
2577	LORI BENNETT
2578	JAMES FLETT, SODA MT WILDERNESS COUNCIL
2579	PHILIP KLING
2580	JACK BROWN
2581	LINDA BUTURAIN, JENNY CREEK CAFE
2582	ALISON KLING
2583	DAVE WILLIS, SODA MT WILDERNESS COUNCIL
2584	DIANE MEYER
2585	MYRA ERWIN
2586	ROXI SMITH, SO OREG TIMBER IND ASSOC
2587	JOHN ARNDT
2588	HOWARD CLAASSEN
2589	FREDERICK SHEPARD
2590	FRED HARRISON
2591	WILLIAM WILLIAMS, SIERRA CLUB, ROGUE RIVER CHAPTER
2592	GREGORY CAREY
2593	TYRRELL HART, MOTORCYCLE RIDERS
2594	ROGER MURRAY
2595	JULIE NORMAN, WMS WATERSHED PROTECTION ASSN
2596	CHRISTOPHER BRATT, HEADWATERS
2597	MARC PREVOST
2598	THOMAS ALVORD
2599	RICHARD FELGENHOUR
2600	DANIEL KELLOG
2601	JOHN BISHOP
2602	GERRY GRIFFIN
2603	SAM SHAVER, EASTERN OREGON FURTAKERS
2604	STEVE COX
2605	KATE CROCKETT, OREGON NATURAL RESOURCES COUNCIL
2606	LIPSCOM DENNIS
2607	FRAZIER NICHOL, GRANT CO CONSERVATIONISTS
2608	TIM LILLEBO
2609	DUNCAN MACKENZIE
2610	PALMER CARROLL
2611	RONALD HOLLARS, OREGON WILDLIFE FEDERATION

Comment Letters from Federal, State and Local Governments and Indian Tribes

Following are letters received from Federal, State and Local governments and Indian Tribes (reprinted in that order) with responses to the substantive EIS adequacy and accuracy comments contained within the letters. Responses to WSA-specific comments in these letters are referred to the specific appendices pertinent to the particular WSAs. The letters were numbered in the order received along with all written comments during the public comment period. They are reprinted here in numerical order within each government level category (i.e., all Federal letters followed by all State letters, Local Government letters and letters from Indian Tribes).

Letters From Federal Agencies



Agriculture Service 10th Floor
Portland, Oregon 97204

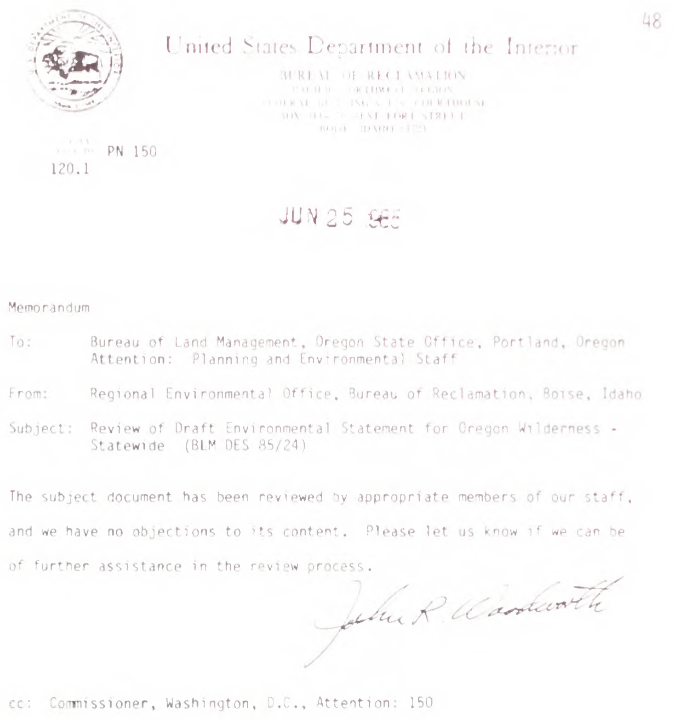
May 15, 1985

Wilderness Studies (935)
Bureau of Land Management
P O Box 2965
Portland, Oregon 97208

We have no comments on the Draft Environmental Impact Statement prepared on the Oregon statewide wilderness study recommendations.

JACK P. KANALZ
State Conservationist

The Soil Conservation Service
is an agency of the
Department of Agriculture



48

United States Department of the Interior

BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
FEDERAL BUILDING & U.S. COURTHOUSE
BOX 043-550 WEST FORT STREET
BOISE, IDAHO 83724

IN REPLY REFER TO: PN 150
120.1

JUN 25 1985

Memorandum

To: Bureau of Land Management, Oregon State Office, Portland, Oregon
Attention: Planning and Environmental Staff

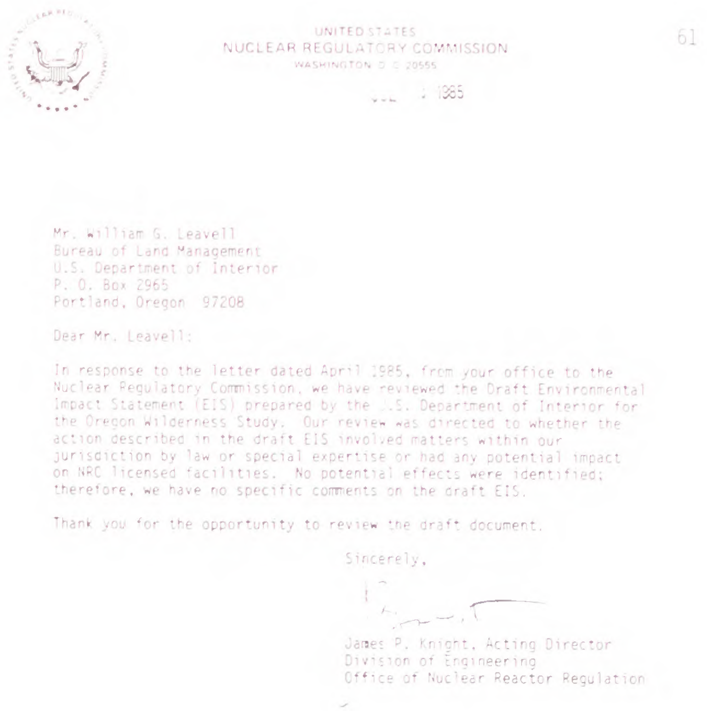
From: Regional Environmental Office, Bureau of Reclamation, Boise, Idaho

Subject: Review of Draft Environmental Statement for Oregon Wilderness - Statewide (BLM DES 85/24)

The subject document has been reviewed by appropriate members of our staff, and we have no objections to its content. Please let us know if we can be of further assistance in the review process.

John R. Woodworth

cc: Commissioner, Washington, D.C., Attention: 150



61

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUL [illegible] 1985

Mr. William G. Leavell
Bureau of Land Management
U.S. Department of Interior
P. O. Box 2965
Portland, Oregon 97208

Dear Mr. Leavell:

In response to the letter dated April 1985, from your office to the Nuclear Regulatory Commission, we have reviewed the Draft Environmental Impact Statement (EIS) prepared by the U.S. Department of Interior for the Oregon Wilderness Study. Our review was directed to whether the action described in the draft EIS involved matters within our jurisdiction by law or special expertise or had any potential impact on NRC licensed facilities. No potential effects were identified; therefore, we have no specific comments on the draft EIS.

Thank you for the opportunity to review the draft document.

Sincerely,

James P. Knight, Acting Director
Division of Engineering
Office of Nuclear Reactor Regulation

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

In reply refer to: SJ

AUG - [illegible] 1985

Mr. William G. Leavell
State Director
Wilderness Studies (935)
USDI Bureau of Land Management
P.O. Box 2965
Portland, Oregon 97208

Dear Mr. Leavell:

Our Office of Engineering and Construction has reviewed the Draft Oregon Wilderness Environmental Impact Statement (EIS) and offers the following comments.

General

The EIS provides an objective, well-organized discussion of utility corridor impacts resulting from proposed wilderness area designations.

Specific

776.1 1. Effects on Utility Corridor Routing. Several references need clarification in the Section, "Effects on Utility Corridor Routing and Communication Facility Siting." On page 82, column 2, paragraph 3, the sentence would read more correctly as follows, "Both PP&L and BPA have indicated a potential need for the east-west corridor, while only BPA has expressed interest in the north-south corridor."

The final paragraph on page 82, column 2, citing added costs, has been overstated. The added energy loss for routing each AC line around the Basque Hills WSA would be 1.4 million kilowatt hours per year or enough power to supply 120 typical Oregon households. Around Saddle Butte WSA the added energy loss for rerouting each AC line would be 3.0 million kilowatt hours per year or enough power to supply 250 typical Oregon households.

776.2 On page 82, it should be pointed out that the added 4.4 miles to bypass the Basque Hills WSA under Alternatives 1 and 2 and the 9.3 miles to bypass Saddle Butte WSA under Alternative 1 will result in 4.4 and 9.3 miles of increased land use and resource impacts.

776.3 On page 83, the price as noted under notation "2Assumes flat terrain 500-kV lattice tower, single circuit AC" should show costs of $383,300 per mile.

776.4 2. Maps. For your information, we have enclosed a copy of BLM Map 7 which shows proposed WSAs, existing utilities of 66-kV or larger, and planned utility corridors. The following information was not shown on Map 7 and has been added in red. We recommend that it be added.

WSA Vicinity	Comment
1-117 1-132	A proposed southern corridor connects with an existing corridor at Lakeview and heads east along Camas Creek to Pelican and Shallow Lakes, then connects with another existing corridor (Sierra Pacific Power) at Fields. A northern corridor heads east from Lakeview to Crump Lake and then northeast toward the Steens Mountains.
2-14	California Pacific Utilities has an existing line which runs along Calamity Creek and connects to another existing corridor between Griffin and Malheur Creeks.
5-9	BPA is currently studying a proposal to rebuild the 69-kV Columbia Electric Coop and Wasco Electric Coop transmission lines from Maupin to Antelope and Fossil at 115-kV. They will initially operate at 69-kV. Some minor relocations are possible. BPA is in the process of preparing an environmental assessment on the project.
6-3	Idaho Power Company has a 69-kV line between Brownlee and Oxbow dams and north of Oxbow to Hells Canyon.

3. Geothermal Resources. We were unable to complete, by the close of comment date, our evaluation of the effects of the plan on geothermal resources. We will submit those comments as soon as possible.

Preferred Alternative

We were pleased to note that an assessment was made on the impacts of transmission line relocation where wilderness study areas (WSAs) conflict with proposed energy transmission corridors. The presentation makes it easy for decisionmakers to see the effects of wilderness designation on corridors. We feel this is extremely important before any land use decisions are made which preclude future corridor options. Because Alternative 5 (the preferred alternative) proposes parallel construction adjacent to WSAs and because it attempts to mitigate impacts of wilderness designation on planned utility corridors, we support Alternative 5 for management of wilderness in the State of Oregon.

We appreciate the opportunity to review the draft EIS. Please let us know if you need further information.

Sincerely,

Anthony R. Morrell

Anthony R. Morrell
Environmental Manager

Enclosure

1028

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

SEP 30 1985

REPLY TO ATTN OF: M/S 443

William G. Leavell
Oregon State Director
Bureau of Land Management (935)
P.O. Box 2965
Portland, Oregon 97208

Dear Mr. Leavell:

We have completed a review of the Draft Environmental Impact Statement (DEIS) for the Oregon Wilderness. 77 Wilderness Study Areas (WSAs) totaling 2,304,142 acres on Bureau of Land Management (BLM) land were evaluated with seven alternatives for recommendation to the National Wilderness Preservation System. The proposed action recommends 949,989 acres of the WSAs or 41 percent for wilderness. We offer the following comments for your consideration:

1028.1 Chapter 4 of the DEIS (Environmental Conseouences) included several useful tables that identified the potential activities with alternative 7 (No Wilderness/No Action). To compliment this information the Final EIS should include a general discussion of the typical kinds of impacts associated with grazing developments, mines, geothermal and oil and gas developments, power lines and timber harvesting. This discussion should be included to give a better indication of the consequences of nonwilderness designation.

1028.2 The DEIS indicates that water quality would stay the same under alternatives 6 (Commodity Development Emphasis) and 7 (No Wilderness/No Action) and improve under alternatives 1 through 5. Nonpoint source water pollution and ground-water impacts can be significant from mining and oil and gas developments. Nonpoint source water pollution can also occur from grazing and timber harvesting. Typical water quality impacts from these activities should be addressed in the Final EIS.

1028.3 The wilderness suitability determination favors commodity development. It is not clear in the DEIS how natural values like fish, wildlife, botanical habitats, archeological sites, scenic and aesthetic attributes are compared against quantifiable commodity values. For example, page 82 of the DEIS implies that higher construction, operation, and maintenance costs outweigh the natural and wilderness values for the Basque Hills and Saddle Butte WSAs. Other WSAs were determined not suitable because of the moderate possibility of finding energy or minerals resources or potential cattle grazing. The Final EIS should include a discussion of how natural values are factored into the suitability determination.

Some of the WSAs should be expanded to include complete watersheds, topographic units, or plant and animal communities. For example, in the Trout Creek Mountains the boundary is drawn along Willow Creek. This boundary should be changed to protect the rare Whitehorse cutthroat trout endemic to Willow Creek. Also, a wilderness watershed boundary that follows a ridge would have greater water quality benefits.

Alternative 1 (All Wilderness) would be the environmentally preferred alternative and would result in the greatest water quality improvements. The impact of this designation on grazing an mineral interests would appear to be small since a fraction of three percent of the nation's beef production would be affected and Oregon's 1983 mineral production amounted to only 0.5 percent of the national receipts. The selection of alternative 1 would not impose significant economic costs on the nation or the region.

Based on our review, we rated the DEIS EC-2 (EC: Environmental Concerns; 2: Insufficient Information). The selection of alternative 1 would satisfy our concerns for the reasons cited above. Thank you for the opportunity to review this report. If you have any questions, please contact Wayne Elson in our EIS and Energy Review Section at (FTS) 399-1463.

Sincerely,

Robert S. Burd
Director, Water Division

United States Department of the Interior
BUREAU OF MINES
WESTERN FIELD OPERATIONS CENTER
EAST 360 3RD AVENUE
SPOKANE, WASHINGTON 99202

March 31, 1987

Memorandum

To: Charles W. Luscher, State Director, Bureau of Land Management, Portland, Oregon

From: Supervisor--Mineral Issues Involvement Section, Branch of Engineering and Economic Analysis

Subject: Wilderness Studies (935), Oregon Wilderness Supplement to the Draft Environmental-Impact Statement

1397.1 We have reviewed the subject document to insure minerals are covered adequately. The document shows excellent detail in mineral potential classification for each Wilderness Study Area (WSA) (Vol. 1, p. 45, table 3-6). However, the accuracy of classes designated is questionable. Mineral studies by this agency and the U.S. Geological Survey were apparently not utilized. Only Bureau of Land Management, Oregon State, and private industry studies are referenced (Vol. 1, p. 44).

We urge you to compare the present mineral potential classifications for each WSA with the mineral evaluations prepared by the Bureau of Mines and the Geological Survey prior to making a decision.

D'Arcy P. Banister

United States Department of the Interior
BUREAU OF MINES
WESTERN FIELD OPERATIONS CENTER
EAST 360 3RD AVENUE
SPOKANE, WASHINGTON 99202

July 8, 1986

Memorandum

To: Wilderness Studies (935), Bureau of Land Management, Portland, Oregon

From: Supervisor, Minerals Involvement Section, Branch of Engineering Studies

Subject: Review of Draft Environmental Impact Statement (DEIS), Vols. I-IV for Oregon Wilderness

A review of the subject document has revealed a very good analysis of the mineral resources and their impact on and from other resources (e.g., recreation, timber, grazing, etc.). Of particular note is the comparison analysis of moderate and/or high mineral potential versus each alternative as it applies to specific mineral commodities (energy and nonenergy) - tables 4-7, 4-10, and 4-11. This format is something unique and should provide the public with a much better "picture" of how each mineral commodity, particularly strategic minerals, is affected. BLM should be commended on this innovative idea. However, we feel that a general table depicting overall acres of high and medium mineral potential lands (not by commodity) affected under each alternative should also be included in the report. This was not done in Volume I. We feel the public needs to recognize the overall "big picture" effect that each alternative has on the mineral resource base of Oregon.

Thank you for giving us the opportunity to review the subject document.

D'Arcy P. Banister

1705

Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208 - 3621

APR 2 4 1987

SJ

Mr. Charles W. Luscher, State Director
Attention: Wilderness Studies (935)
USDI Bureau of Land Management
P.O. Box 2965
Portland, Oregon 97208

Dear Mr. Luscher:

Bonneville Power Administration (BPA) has reviewed the Supplement to Draft Oregon Wilderness Environmental Impact Statement (EIS). We are pleased to note the manner in which you have addressed utility corridors. You have done an excellent job of illustrating corridors, addressing consequences if corridors are adversely affected, and defining designated corridors on a statewide basis.

We offer the following suggestions for your consideration in preparing the final EIS.

Utility Corridors

1. From the standpoint of existing and planned transmission facilities, the preferred alternative (Alternative 5) is consistent with BPA programs.

1705.1 2. Since the issuance of the Oregon Wilderness EIS, BPA and Midstate Electric Cooperative have proposed a new 115-kV project in the LaPine-Fort Rock-Buffalo Flat area. An environmental assessment is being prepared, and a decision on the route location is expected this fall. Although this transmission project would not be affected by any wilderness study areas, we have marked the proposed route on the enclosed copy of Map 7 for your information. BPA has worked closely with the BLM Lakeview District on this project.

1705.2 3. We have noted a few suggested revisions to Table 4-14, page 80, on the enclosed marked-up copy. The $4,000 value under note 4 for Annual Energy Loss Cost for an AC line should read $14,000. The cost values are correct but should be shifted to line up under headings.

Geothermal and Renewable Resources

1705.3 The preferred alternative (Alternative 5) is generally consistent with the potential for renewable resource development in the Northwest. However, we wish to draw your attention to the fact that there are geothermal resource sites at some of the areas you are considering for wilderness designation. The following comments address geothermal potential.

1. Industry lease applications and BPA resource assessment studies suggest geothermal potential in approximately 7 of the proposed wilderness candidate areas. These are 7 of the 58 high temperature sites which have passed the resource and institutional constraints screening applied to over 400 sites in Oregon. Specific areas of resource potential which overlap preferred alternative (alternative 5) wilderness candidate sites include:

County	Site	Legal	*WSA No.
Harney	Alvord HS	34S/34E	2-85F
	Mickbray HS	33S/35E	2-73A
	Flagstaff Butte HS	39S/37E	3-156
Lake	Crump HS	38S/34E	1-117
	Devil's Garden Area	24S/15E	1-2
	Four Craters Area	25S/17E	1-22
Malheur	Jordan Craters Area	25S/17E	3-28

*Wilderness Study Area

2. Existing geothermal leases should generally be recognized, along with a potential need for transmission line right-of-way in the event of development and utilization (Volume I, page 77). Wilderness classification after lease issuance may affect exploration, development, or operation of geothermal electric power generation facilities (Volume I, page 71). This is particularly true in the Alvord Area and adjacent Resource Areas (Andrews, Southern Malheur, and Warner Lakes). We recommend that access to potential geothermal sites be assured in the final EIS and decision document.

We appreciate the opportunity to comment on the Supplement to the Draft Oregon Wilderness EIS. If you have any questions on these comments, please contact John O. Hooson, Division of Land Resources, Bonneville Power Administration, at 503-230-3299 or (FTS) 429-3299.

Sincerely,

Anthony R Morrell

Anthony R. Morrell
Environmental Manager

Enclosure

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE WASHINGTON 98101

APR 24 1987

REPLY TO
ATTN OF: WD-136

Mr. Charles W. Luscher
Oregon State Director
Wilderness Studies (935)
Bureau of Land Management
P.O. Box 2965
Portland, Oregon 97208

Dear Mr. Luscher:

We have completed a review of the Supplement Draft Environmental Impact Statement (SDEIS) for the Oregon Wilderness. Eighty-five Wilderness Study Areas (WSAs) totaling 2,648,799 acres on Bureau of Land Management (BLM) land were evaluated, with seven alternatives for recommendation to the National Wilderness Preservation System. The proposed action recommends 1,000,508 acres of the WSAs or 37.7 percent of the acreage evaluated for wilderness.

In addition to the comments previously offered to you in our letter of September 20, 1985, on the Draft EIS (and hereby incorporated by reference), we offer the following comments for your consideration:

2453.1

> Wilderness status precludes exploitation of the nation's non-renewable resources by protecting "reserves" for future generations to administer as they see fit. In addition, protection of water quality and fishery and wildlife habitat improves with wilderness designation. Cattle and mining interests, while of potential importance to local economics, need to be balanced against the total resource needs of future generations.
>
> We have noted that some of the WSAs should be expanded to include complete watersheds, topographic units, or plant and animal communities. One example cited was the Trout Creek Mountains boundary. Another is the Bowden Hills WSA, which is described as having a highly natural condition, amenities that are relatively uncommon in southeastern Oregon, and outstanding opportunity for solitude. We especially recommend further consideration of this area for wilderness status.

2453.2

We would like to reemphasize that Alternative 1 (All Wilderness) would be the environmentally preferred alternative and would result in the greatest water quality protection. BLM manages approximately 15.7 million acres of land in Oregon. Of that total, Alternative 1 would protect approximately 2.65 million acres which, given the benefits, would not appear to be unreasonable.

Based on our review, we have rated the SDEIS EC-2 (Environmental Concerns-Insufficient Information). The selection of Alternative 1 would satisfy our concerns for the reasons cited above and in our letter of September 20, 1985. Thank you for the opportunity to review this report. If you have any questions, please contact Ann Uhrich in our EIS and Energy Review Section at (FTS) 399-8516.

Sincerely,

Robert S. Burd

Robert S. Burd
Director, Water Division

Enclosures

Responses To Letters From Federal Agencies

Response 776.1: This updated information was used in the development of the Supplement to the Draft EIS (DEIS) and carried forward into this Final EIS (FEIS).

Response 776.2: This utility corridor section analyzes impacts on utility corridor routing only. Impacts of projected utility corridor development on other resources are addressed under each affected resource topic (e.g., Impacts on Wilderness Values, Wildlife, Vegetation, etc.).

Response 776.3: See Response 776.1.

Response 776.4: All of the routes were added to Map 7 except for those affecting WSAs OR-1-117 and OR-1-132. Those route proposals were considered to be alternatives to the main east-west corridor already shown on the map and adequately covered in the EIS. Their inclusion would not appreciably add to the existing EIS analysis.

Response 1028.1: The FEIS now includes descriptions of projected activities in the WSAs under the Description of the Proposed Action and Alternatives section of the Statewide volume, with more specific detail in the WSA-specific appendices. Anticipated impacts from these activities are now described in greater detail under the Environmental Consequences sections of the Statewide volume and appendices.

Response 1028.2: The Watershed discussions in the FEIS now indicate some degradation of water quality and quantity, and increased sedimentation, from projected energy and mineral, grazing, timber and utility line development in a number of WSAs under all Statewide alternatives except Alternative 1, All Wilderness.

Response 1028.3: Each of the environmental consequences discussions in the EIS focus on impacts to the particular resource values or use being discussed. These analyses of impacts are not intended to imply that decision criteria are weighted toward any particular resource or use. Although the EIS is not the appropriate document to address decision criteria, rationale for the proposed action of each WSA is included, for reader information, as Section 5 in each WSA-specific appendix. Upcoming Wilderness Study Reports, which represent the decision documents for BLM's wilderness study program, will include detailed discussions of decision criteria and rationale.

Response 1028.4: The WSA boundaries were designated using criteria patterned after the actual language of the Wilderness Act of 1964 (see BLM's Wilderness Inventory Handbook, September 1978). The designation process in Oregon covered a period from 1978 to 1981 and utilized extensive public input in applying the Wilderness Act criteria. The resulting WSAs, with their current boundaries, represent the EIS area to be studied. However, the study process can and does consider alternative boundaries for wilderness designation. Watershed and ecological community boundaries were considered in developing these alternatives.

Response 1028.5: The environmentally preferred alternative for each WSA will be identified in the Wilderness Study Report.

Response 1032.1: As the various mineral commodities can have overlapping areas of potential for occurrence, and since the value of different commodities greatly varies (e.g., gold versus sand and gravel), it was felt that the difficulties involved in creating such a table would not be justified by the relative analysis value of the table. Such a table could also be easily misinterpreted. The FEIS attempts to provide a "big picture" perspective by identifying the total acres withdrawn from mineral location and leasing under each alternative and through an assessment of potential development of energy and mineral resources in the WSAs and overall impacts on projected exploration and development.

Response 1397.1: The FEIS now references the completed mineral surveys by the Bureau of Mines and U.S. Geological Survey. The References section lists those reports that were completed in time to consider them in developing the FEIS. Data from the reports were used to either confirm or revise ratings under the BLM mineral classification system, which classifies the commodities in terms of potential for occurrence rather than development potential. The mineral survey reports also influenced the mineral development scenarios developed for this final EIS. BLM and the Secretary of Interior will consider the results of your remaining surveys prior to making final wilderness suitability recommendations to the President and Congress through the Oregon Wilderness Study Report.

Response 1705.1: Since, as you state, the proposed transmission project would not be affected by any wilderness study areas, it was considered unnecessary to add it to Map 7.

Response 1705.2: The table has been corrected.

Response 1705.3: This information was utilized in developing energy exploration and development scenarios in pertinent WSAs. Other factors considered in developing the scenarios described in each appendix included estimated demand for the resource, accessibility and other physical constraints, and other assessments of potential for occurrence of the geothermal resource.

Response 1705.4: Existing leases are recognized in the EIS and development scenarios include anticipated access needs as well as needed pipelines and transmission lines. Impacts of wilderness designation on projected geothermal development are described in this statewide volume and in more detail in each pertinent appendix.

Response 2453.1: These factors have been addressed in impacts discussions in the environmental consequences sections of the Statewide volume and appendices. See Response 1028.4 regarding WSA and wilderness suitability boundary expansions and Response 1028.3 regarding decision rationale.

Response 2453.2: See Response 1028.5 regarding the environmentally preferred alternative.

Letters From State Agencies

STATE OF NEVADA

CHARD H. BRYAN
Governor

LINDA A. RYAN
Director

STATE OFFICE OF COMMUNITY SERVICES
Capitol Complex
Carson City, Nevada 89710
(702) 885-4420

August 26, 1985

William G. Leavell, Director
Oregon State Office
Bureau of Land Management
Wilderness Studies (935)
P.O. Box 2965
Portland, Oregon 97208

Re: SAI NV #85300072 Project: Oregon Wilderness DEIS

Dear Mr. Leavell:

Thank you for providing the State of Nevada the opportunity to review the above referenced wilderness proposals. Attached is the Governor's Consensus Position on the Pueblo Mountains and Disaster Peak Wilderness Study Areas. Also attached are comments by the Nevada Departments of Minerals and Wildlife and the Divisions of State Parks and Historic Preservation/Archeology.

We will be looking forward to your consideration of our comments on the two wilderness areas located in Nevada in the Final EIS.

Sincerely,

John B. Walker, Coordinator
State Clearinghouse, OCS/SPOC

JBW/ll
cc: Tim Hay, Governor's Office
Enclosures

STATE OF NEVADA

CHARD H. BRYAN
Governor

LINDA A. RYAN
Director

STATE OFFICE OF COMMUNITY SERVICES
Capitol Complex
Carson City, Nevada 89710
(702) 885-4420

August 28, 1985

William G. Leavell, Director
Oregon State Office
Bureau of Land Management
Wilderness Studies (935)
P.O. Box 2965
Portland, Oregon 97208

Re: Governor's Consensus Position -- Oregon Wilderness DEIS

Dear Mr. Leavell:

The State of Nevada has reviewed the BLM Draft Oregon Wilderness Environmental Impact Statement. Two of the areas under consideration, Disaster Peak and Pueblo Mountains, cross the state line and lie partially within Nevada.

All wilderness proposals in Nevada are reviewed by an ad hoc committee of concerned state agencies. This committee has developed, and the Governor has approved, the following consensus position.

490.1 Nevada does not support the creation of wilderness areas through the closure of roads which have been used historically by Nevada residents for access. It is our position that wilderness areas must, under the Wilderness Act, be truly roadless to be even considered for designation.

We note that each of these two wilderness areas includes roads which are proposed to be closed. We strongly urge that the roads not be closed and the wilderness boundaries be redrawn to exclude these roads.

490.2 We also note a moderate-to-good geothermal potential in the Disaster Peak area and range improvements for livestock grazing. We request that boundary realignment also exclude those areas where resource use conflict and managment could occur because of wilderness designation.

Thank you for the opportunity to review and comment on this study.

Sincerely,

Sarah Mersereau
Deputy Director

SM/ll

DEPARTMENT OF MINERALS
400 W. King Street, Suite 106
Carson City, Nevada 89710
(702) 885-5050

June 25, 1985

JOHN WALKER
Clearinghouse Coordinator
State Clearinghouse
Office of Community Services
1100 E William Street - 117
Carson City, NV 89710

RE: SAI NV #85300072

Dear Mr Walker,

The Nevada Department of Minerals appreciates the opportunity to comment on the Oregon Wilderness DEIS.

Only two of the WSAs, Pueblo Mountains and Disaster Peak, lie partially in Nevada.

Pueblo Mountains, OR-2-81, contains no known active mines or mining claims in the Nevada portion. The potential for mineral development is low. Therefore, the Nevada Department of Minerals is unopposed to the preferred alternative for the Nevada portion of Pueblo Mountains recommending 600 acres as wilderness.

Disaster Peak, OR-3-153, contains no known active mines in the Nevada portion; however, 4 mining claims were located in 1982 by Stanley Barnes, Frank Bengoa and James Lebret. The claims were located for gold, and their presence indicates at least some potential for gold production. The Nevada Department of Minerals would be unopposed to the preferred alternative if the WSA boundary were modified to exclude these 4 claims from the WSA.

If you have any questions, please contact this office.

Sincerely,

Doug Driesner
Resource Engineer

DD:wf

50th Anniversary
Nevada State Parks

Division
of
State
Parks
John Richardson
Administrator
Room 119
Nye Building
201 South Fall Street
Capitol Complex
Carson City
Nevada
89710
702/885-4370
Richard H. Bryan
Governor
A division of the
Department of Conservation
and Natural Resources
Roland D. Westergard
Director

July 24, 1985

Mr. John B. Walker, Coordinator
Office of Community Services
1100 East William, Suite 117
Carson City, NV 89710

Dear John:

The Nevada Division of State Parks has reviewed the Oregon Wilderness Environmental Impact Statement, placing particular emphasis on the two areas that cross into Nevada. Both of these areas are in the Andrews Planning Unit. They have been designated OR-2-81/NV 020-642 (Pueblo Mountains) and OR-3-153/NV020-859 (Disaster Peak). We concur with BLM's recommendations for both of these areas, i.e. the preferred alternatives which designate portions of the two WSA's as wilderness areas.

For the last several years, the Division of State Parks has been working with the Desert Trail Association to establish a route for the Desert National Trail from the Canadian border to Mexico. The Oregon portion of the Desert Trail traverses the Pueblo Mountains as it enters Nevada.

The preferred alternative proposes a wilderness area of 38,875 - 43,245 acres, including 600 acres in Nevada. The area offers outstanding opportunities for solitude, plus distinctive geological, botanical, wildlife and scenic qualities. Thus, the proposed wilderness area would assure an ideal setting for the Desert Trail.

The Disaster Peak WSA preferred alternative would be combined with several other adjacent WSA's totaling 126,980 acres, including 12,300 acres in Nevada. Outstanding opportunities for solitude exist, along with a variety of plant and wildlife species, interesting geologic formations and panoramic desert vistas. The gradual slopes of the ridge tops and consistent snowpack on the higher ridges provide good conditions for cross-country skiing and snow shoeing. Hunting and fishing opportunities also abound.

490.4 (cont.)

In a study done by the National Park Service, Disaster Peak was recommended for consideration and evaluation for possible registry as a National Natural Landmark. The Nevada Division of State Parks lists the peak in the Nevada Natural Heritage Planbook. The peak served as a prominent natural landmark for early pioneers. Its inclusion in the proposed wilderness area will assure its continued protection.

We appreciate having had the opportunity to review both of the above mentioned WSA's. Should you have any questions, please do not hesitate to contact me.

Sincerely,

John Richardson, Administrator

Steve Weaver

By: Steve Weaver
Assistant Administrator

SW:vh
801.6b(10)

986

VICTOR ATIYEH
GOVERNOR

Forestry Department

OFFICE OF STATE FORESTER

2600 STATE STREET, SALEM, OREGON 97310 PHONE 378-2560

August 30, 1985

William Leavell, Director
Bureau of Land Management
P.O. Box 2965
Portland, Oregon 97208

Dear Bill,

The BLM Draft Oregon Wilderness Environmental Impact Statement (DEIS) fairly states the situation and, I believe, correctly concludes that the Soda Mountain area is not suitable for wilderness.

986.1

The 32,000 acre proposal for wilderness designation, made by the Soda Mountain Wilderness Council, would lock-up timber, grassland, and brushfields that are not just Public Domain lands, but also would include O & C lands, and some lands that I understand are owned by the State of California.

986.2

Oregon cannot contend with an unending series of set-asides that serve to further reduce the incomes to local government. This proposal potentially would restrict the income from grazing and timber production on the unreserved BLM lands, and also would eliminate income from some dedicated O & C lands, which are crucial to many Oregon counties.

The potential effects of designation extend many miles outside of the boundaries due to visibility restrictions that affect normal and ordinary activities on forest lands that produce dust or smoke.

Wilderness designation could affect the ability of forest fire protection forces to provide the desired level of protection to property due to prohibitions on use of motor-driven equipment, and policies that, in some cases, let wildfires burn unchecked.

Oregon has over 2.1 million acres of Congressionally-designated wilderness. Further designations are unwarranted from an economic effects viewpoint. Also, the Soda Mountain proposal, specifically, has limited wilderness characteristics and little to recommend it for recreational use.

Sincerely,

H. Mike Miller
State Forester

HMM/DHS:jp

VICTOR ATIYEH
GOVERNOR

OFFICE OF THE GOVERNOR
STATE CAPITOL
SALEM, OREGON 97310

September 3, 1985

Bill Leavell, Director
Bureau of Land Management
P.O. Box 2965
Portland, OR 97208

Dear Mr. Leavell:

I would like to thank you for providing the State of Oregon the opportunity to comment on your draft Oregon Wilderness Environmental Impact Statement.

With the recent court decision to reinstate lands previously excluded by Secretary Watt, I do not believe a response from the State would be appropriate until these reinstated lands are included in the BLM review. When these reinstated lands are reviewed and supplemental environmental impact statement is prepared, I will provide you with a coordinated state response.

Sincerely,

Victor Atiyeh
Governor

VA/dr
0463M

1264

Oregon Department of Agriculture
635 CAPITOL STREET NE, SALEM, OREGON 97310-0110

March 2, 1987

Wilderness Studies (935)
Bureau of Land Management
PO Box 2965
PORTLAND OR 97208

Gentlemen:

We have reviewed, as requested, draft supplements to the Oregon Wilderness Environmental Impact Statements, Volumes 1 and 2. In our opinion, the "proposed action" detailed in these documents is the preferred alternative.

1264.1 This alternative recommends nearly 40% of the Wilderness Study acres for wilderness designation. Significant erosion control, water quality, and fish and wildlife benefits would accrue from the designation of these lands as wilderness.

The proposed action, in our opinion, provides a reasonable balance between environmental and economic alternatives.

Sincerely,

George C. Stubbert, Administrator
Soil & Water Conservation Division
(503) 378-3810

ceL41P

1335

IDAHO AIR NATIONAL GUARD
124TH TACTICAL RECONNAISSANCE GROUP
BOISE AIR TERMINAL (GOWEN FIELD)
P. O. BOX 45, BOISE, IDAHO 83707

20 March 1987

Oregon Wilderness Studies

Bureau of Land Management
P.O. Box 2965
Portland, OR 97208

EIS Team Leader

1335.1 The 124th Tactical Reconnaissance Group currently schedules and maintains three Military Training Routes (MTRs) which overfly 36 of the proposed Oregon Wilderness Study Areas (see Atch 1). These MTRs, designated VR316/319, VR1301, and VR1302, are used by numerous Air National Guard, Air Force, Navy, and Marine units. During calendar year 1986 these routes were flown a total of 2,015 times averaging 5.5 times per day. The mission totals for 1987 are projected to remain the same or increase slightly.

Aircraft utilizing these MTRs are authorized to employ terrain following operations from 100 ft above ground level (AGL) to 3,000 ft AGL while flying within the route boundaries. Aircraft speeds vary from 300 kts ground speed to 600 kts ground speed depending on type aircraft and specific mission. The objective of these missions is to simulate underflying enemy detection systems in a hostile environment.

When MTRs are established, populated areas, potentially noise sensitive regions, and low altitude Civil Air traffic are considered and avoided to the maximum extent possible. For these reasons, many remote, sparsely populated areas become optimum training grounds for low level, high speed flight. Such is the case with the Eastern Oregon MTRs.

Although we do not wish to discourage the designation of wilderness areas, we do want to express our concern over the possible conflict between low altitude overflights and the feeling of solitude sought by the wilderness area users. These routes are of vital importance to our combat training and readiness. Any constraint on the use of existing routes could have a severe impact on unit readiness.

Ralph E. Townsend
RALPH D. TOWNSEND, Colonel, IDANG
Commander, 124TRG

1 Atch
Affected Areas

cc: NGB/DOS
AFRES Nw Mtn Region
HQ IDANG/TAG

AFFECTED AREAS

VR316/319

Vale District/Burns District/Lakeview District

3-77B	Wild Horse Basin	WSA
3-53	Dry Creek	WSA
3-56	Dry Creek Buttes	WSA
3-77A	Honeycombs	WSA
3-32	Cottonwood Creek	WSA
3-31	Camp Creek	WSA
5-43	Cougar Well	WSA
1-78	Orejana Canyon	WSA
2-23L	Stonehouse	WSA
2-72C	Sheepshead Mtns	WSA
3-47	Cedar Mountain	WSA
3-110	Lower Owyhee Canyon	WSA
3-111	Saddle Butte	WSA
3-59	Owyhee Breaks	WSA
3-73	Blue Canyon	WSA
3-75	Slocum Creek	WSA
3-128	Jordon Craters	WSA

VR1301

Vale District/Burns District/Lakeview District

3-27	Beaver Dam Creek	WSA
2-86E	Blitzen River	WSA
2-87	Bridge Creek	WSA
2-85F	High Steens	WSA
2-86F	Little Blitzen Gorge	WSA
2-72J	West Peak	WSA
2-73A	East Alvord	WSA
2-72I	Table Mountain	WSA
2-73H	Winter Range	WSA
2-74	Alvord Desert	WSA
2-72D	Wildcat Canyon	WSA
3-118	Bowden Hills	WSA
3-195	Owyhee Canyon	WSA

VR1302

Vale District/Burns District

3-27	Beaver Dam Creek	WSA
3-18	Castle Rock	WSA
3-111	Saddle Butte	WSA
3-118	Bowden Hills	WSA
3-173	Upper W Little Owyhee	WSA
3-195	Owyhee Canyon	WSA
3-194	Lookout Butte	WSA

OFFICE OF THE GOVERNOR
STATE CAPITOL
SALEM, OREGON 97310-1347

April 24, 1987

Charles W. Luscher
State Director
Bureau of Land Management
P. O. Box 2965
Portland, OR 97208

Dear Bill:

Enclosed for your consideration are the comments of the Oregon Department of Geology and Mineral Industries (DOGAMI), the Department of Fish and Wildlife (ODFW), the State Department of Forestry and the State Economist on the Supplement to the Draft Environmental Impact Statement (SDEIS) on Oregon Wilderness. The Bureau of Land Management (BLM) has a special responsibility to consider the values of all Oregonians in the wilderness study process. We commend you for the extensive series of hearings you held to solicit citizens' views throughout Oregon and adjacent parts of Idaho.

I would like to address our key concerns:

1. Mineral Resources.

Our principal concern with the SDEIS is the failure to include and analyze the results of the mineral inventories being prepared by the U.S. Geological Survey and the Bureau of Mines. As I noted at the hearing on the SDEIS, we believe the final EIS should be delayed until all the mineral reports have been received and considered. Without this information it will be impossible to weigh the resource trade-offs inherent in any wilderness designation.

We recognize that this could cause delays. To avoid this, DOGAMI will send you a priority list of the WSA's most needing study. The list will include areas not recommended by you for designation, since many Oregonians support designation of additional areas and they need to be evaluated too. In addition, if you would share the draft mineral reports with DOGAMI as soon as you get them, we could get them reviewed sooner.

The mineral resource evaluation is critical because mineral resources may provide significant opportunities for economic development and diversification in southeastern Oregon. We need to know where economically viable mineral development opportunities exist before making wilderness designation recommendations.

2. Wildlife Habitat

As noted in the ODFW comments, the environmental impact of wilderness designation (or non-designation) on important wildlife habitat values is not addressed in the SDEIS. Since one of the main reasons for wilderness designation is protection of wildlife habitat, this is a significant omission.

3. Wilderness Management

If wilderness values are to be protected, we urge you to reevaluate study area boundaries. Wilderness area boundaries should correspond, as much as possible to natural topographic features. If they do, resource protetion will suffer.

Many of the public and agency comments on the SDEIS express concerns about how wilderness areas, if designated, will be managed. We have received many letters from Oregonians who do not understand the effect of wilderness designation on prior grazing use and from others who are concerned about losing motor vehicle access to wilderness areas. Either in the FEIS or through other public education methods, the real effect of wilderness designation on grazing needs to be explained.

In addition, you need to consider the effect of restricting motor vehicles on overall recreational use in these areas. Obviously, wilderness should be protected for reasons beyond recreation, but in the arid parts of our state motorized access is a significant issue. By addressing it explicitly, you will provide better information to Congress.

4. Scenic Rivers

The Owyhee and John Day Rivers have outstanding recreational value and portions have been designated as Oregon Scenic Waterways. The wilderness recommendations should be compatible with continued management of the river corridors to provide outdoor recreation for Oregonians and enhance tourism. Your wilderness recommendations should reflect the special scenic and recreational values of the Lower John Day and North Pole Ridge study areas.

We appreciate the opportunity to comment on the SDEIS. We look forward to working with you in the future to develop our own recommendation to Congress on what BLM areas should be designated as wilderness areas. To do this we will need to tour the areas and discuss management options further with you and with the public. Through such discussions and site visits, we will be able to resolve some of the inconsistencies in the existing state agency recommendations. We will only be able to do so, however, if you improve the analysis in the final EIS to include better resource inventories, analyze the impact of wilderness designation thoroughly and fully explain the management implications of wilderness designation.

Sincerely,

Gail Achterman

Gail L. Achterman
Assistant to the Governor
for Natural Resources

NG:cs

Enclosures

cc: Dept. of Geology & Mineral Industries
Dept. of Fish & Wildlife
Dept. of Forestry
State Economist

4/10/87

OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES REVIEW OF THE U.S. BUREAU OF LAND MANAGEMENT SUPPLEMENT TO DRAFT ENVIRONMENTAL IMPACT STATEMENT ON WILDERNESS

Department staff reviewed the Draft EIS dated April 1985 and the Supplement to Draft EIS dated January 1987. The Department's review of the Draft EIS was dated June 14, 1985. Concerns and comments contained in that response are repeated herein.

The following review is in four parts: 1) Recommendation 2) Major areas of concern for Draft EIS and Supplement 3) Comments on specific WSA evaluations and 4) Comments regarding information presented in the Supplement to Draft, Volume 1 - Statewide.

1704.5

1) Recommendation

Good inventory data are required for informed judgements about wilderness versus nonwilderness recommendations. It must be stressed that several key mineral data bases are incomplete or unavailable at this time.

Recent mineral exploration has revealed numerous gold prospects scattered throughout southeastern Oregon in areas which have not produced precious metals in the past. The geologic history of this Basin-Range region is similar to that of northern Nevada which has become the principal gold mining region in the United States.

The incompleteness of mineral inventories in metallic and nonmetallic areas argues for caution in making wilderness recommendations. Other areas may have significant energy resources including geothermal energy. Future Federal minerals leasing of nonwilderness areas may continue to provide important revenue to county government in Crook, Harney, Lake, and Malheur Counties.

The wilderness recommendations will have a special effect on the "split estate" lands in which the state owns mineral values. These undeveloped mineral resources may contribute potentially important revenues to our Common School fund and thereby have an impact on future generations throughout Oregon.

We recommend that the BLM delay completion of the Final EIS until sufficient geologic and mineral resource inventory data are available to permit valid evaluations of the mineral resource potential of the lands involved.

2) Major Areas of Concern for Draft EIS and Supplement

1. Mineral and energy resource data are very limited for most of the WSAs. Existing geologic maps of most of southeastern Oregon are small scale, rapidly compiled reconnaissance maps that are not of the quality needed for evaluating mineral resource potential. For some sizeable areas there is no available geologic coverage.

   Scientific personnel of the U.S. Geological Survey and the U.S. Bureau of Mines are in the process of completing geologic and mineral resource studies of some of the WSAs including small scale geologic mapping and stream-sediment geochemical sampling. The information obtained will be published or placed in open-file. It was not now available for use by BLM personnel during compilation of the Draft EIS or Supplement to the Draft.

1704.5 (cont.)

   Additional sources of information include reports on reconnaissance geochemical sampling programs conducted by BLM personnel and other agencies working under contract with BLM.

   Available geologic maps and mineral resource data are not an adequate basis for the evaluation of the of the mineral resource potential of most WSAs included in the Proposed Action. Data now being developed by federal and state agencies should be consulted and referenced prior to preparation of a final EIS.

1704.6

2. The DEIS contains very little information on operating mines, past mineral production or the geologic distribution of known mineral occurrences in southeastern Oregon.

1704.7

3. The possible economic impact of mineral and energy resource development is not adequately addressed in the DEIS or Supplement. The statements in Volume 1 that "the probability of any of the alternatives having a substantial effect on the economic future of the region is low" is incompatible with the moderate to high ratings given to the mineral potential of many of the WSAs.

   The areas in Oregon most affected by the Proposed Action are sparsely populated parts of Malheur, Harney and Lake counties. Their economies are largely dependent on cattle ranching. Diversification of industry is essential to economic growth. Any substantial growth in the minerals or energy producing industry could significantly improve the local economies.

1704.8

   In recent years at least 30 gold occurrences have been discovered in various parts of the three county area. These occurrences may represent a different type of gold deposit from those found in the well known historic gold fields of northeastern and southwestern Oregon. Hundreds of deposits of a similar nature have been found in the last 30 years in parts of Idaho, Nevada and California. Many of these are now in production.

4. The geothermal potential of the region is understated. Southeastern Oregon includes many areas where surface and near surface manifestations of geothermal energy are present, mainly hot spring and wells. The high regional heat flow, warm springs, and structures indicate possible geothermal resources capable of supporting future energy needs at a time when other domestic energy options appear increasingly less attractive. Six Known Geothermal Resource Areas (KGRA)

1704.8 (cont.)

   have been officially designated by the U.S. Geological Survey within southeastern Oregon: Vale Hot Spring; Crump Geyser; Lakeview; Klamath Falls; Burns Butte; Alvord and Summer Lake. Many other geothermal systems may be "blind" at the surface, thereby requiring that extra care be taken not to unnecessarily remove them from the exploration arena. In addition a number of other low-temperature geothermal resource areas have been identified. Wilderness withdrawals in conformance with the Proposed Action alternative will very likely effect geothermal resource developments in the future.

5. The potential for the development of metallic and nonmetallic mineral resources is understated. Recent geologic data have enhanced our understanding of caldera mineralization and suggested new areas of metallic mineral resource potential. Geochemical sampling for BLM revealed several areas of potential previously thought to be barren. For nonmetallic commodities recent developments such as the Eagle-Picher diatomite operation and the ongoing bentonite operation of Teague Minerals indicate resource potential with real economic benefits for Oregon. For oil and gas, discoveries in Nevada indicate a need to reconsider the potential of southeastern Oregon.

1704.9

6. Accessibility of State and private inholdings are of particular concern. The State of Oregon owns the mineral rights on several thousand acres of split-estate lands in and near various WSAs. The State has retained these rights in anticipation of deriving public benefit from future discovery and development of mineral resources on some of the lands. Funds derived from mineral leases contribute to the State's Common School Fund.

   Proposed road closures could isolate or inhibit access to mineralized areas outside of WSAs. The right of access to valid claims and leases should not be restricted by de facto wilderness management and wilderness recommendations should be designed to minimize adverse impacts of this type outside wilderness boundaries.

1704.10

3) Comments on Specific Wilderness Study Area Evaluations

Lakeview District

Rating the mineral resource potential of the wilderness study areas is difficult and premature due to the lack of inventory data. Where detailed mapping and regional sampling programs are not available before evaluations

1704.10 (cont.)

can be made, it is necessary that all known indicators of mineral wealth be considered in assessing mineral potential.

Oil and gas leasing has occurred between Devils Garden (1-1) and Squaw Ridge (1-3), and in the Diablo Mountain unit (1-58). The geology of Squaw Ridge is favorable for nonmetallic mineral resources. Devils Garden (1-1) and Squaw Ridge (1-3) include basaltic lava fields less than 10,000 years old and, therefore, may have geothermal potential.

The base of Abert Rim (1-101) has warm springs and favorable geologic structures for geothermal resources. Oil and gas may also be present.

Fish Creek Rim (1-117) has been extensively leased for oil and gas historically and geothermal leasing has occurred in the eastern and southern parts of the unit. Warm springs with temperatures ranging from 22°C to 58°C and flows of up to 1900 gallons per minute are recorded. Crump Geyser records a temperature of 121°C. Although potential for this well is compromised by location, the general potential of the area is evident.

Burns District

The Sheepshead Mtn. (2-72C), Table Mtn. (2-72II) and East Alvord (2-73A) units have not been investigated in detail and potential for mineral resources cannot be confidently evaluated. However, each of the units contains extensive areas of fresh water lake sediments of the type which, elsewhere in southeastern Oregon, are known to include nonmetallic mineral resources such as bentonite and diatomite. East Alvord (2-73A) is also an area of high heat flow (268 and 134 milliwatts per square meter), warm springs (Mickey Springs; 87°C, 100 gpm) and recognized geothermal potential. Part of the unit is in the Alvord KGRA.

Alvord Desert unit (2-74) is regarded as prime geothermal resource area based on evaluations of local geologic structure and heat flow. Geothermal exploration and leasing have occurred. Oil and/or gas may also be present at depth. There is moderate potential for evaporite deposits in the Coyote Lake area (East Alvord 2-73A) and Alvord Desert (2-74). Flagstaff Butte (2-77, 78) has high geothermal potential. Gold has been discovered there recently.

The Pueblo Mountains unit (2-81) has numerous mercury, copper, gold, and uranium occurrences and is associated with historic leasing for oil, gas, and geothermal resources.

The East Home Creek unit (2-85H) is an area of prospects and historic activity for uranium, mercury, and zeolites.

Vale District

The Honeycombs unit (3-77A) is near known deposits of perlite, zeolite, bentonite and pumicite. High heat flow has been measured in the unit. The area occupies a caldera, suggesting possible significant mineral potential. This is not adequately considered in the evaluation. Mining claims covering precious metal anomalies have been located recently on the southeast edge of the unit.

The Willow Creek (3-152) and Disaster Peak units (3-153) show caldera geology and contain occurrences of uranium, mercury and gold. Exploration for gold is underway in the Disaster Peak area. Valley areas adjacent to the northwest have numerous warm springs.

Diatomite occurs in the Fifteenmile Creek (3-156) and Oregon Canyon (3-157) areas and is in need of further evaluation.

Prineville District

General geology and leasing indicate the possibility of significant oil and gas potential beneath the Thirty Mile (5-1), Lower John Day (5-6), and North Pole Ridge (5-8) areas. Leasing for oil and gas has occurred in the South Forks (5-33) and Sand Hollow (5-34) areas.

Rock chip samples in the North Pole Ridge (5-8) unit yield anomalous values of gold and zinc according to BLM.

The Badlands (5-21) may have potential for geothermal energy in view of the proximity of Newberry Crater. This area lies adjacent to uranium and mercury prospects, hence metallic mineral potential is likely.

The South Fork (5-33) and Sand Hollow (5-34) areas are favorable for bentonite clay, which is being mined nearby, and other industrial mineral resources. Adjacent lands are being explored for precious metals.

4) Comments Regarding Information Presented in the Supplement to Draft-Volume 1 - Statewide

Page x, P. 10, P. 17. Wilderness Management Policy (1981) theoretically may permit mineral development on claims and

leases with valid existing rights but past experience indicates that pressure exerted on the BLM and claim or lease owners by wilderness advocates would very likely prevent substantial mine development on any lands inside the boundaries of wilderness areas.
Page 5. Table 1-1 should also show the acreage of split-estate lands in which the surface is managed by the BLM and the minerals are owned by the State or others.
Page 18, Page 58. Regarding the State's ability to lease State owned mineral rights and the lessees ability to mine on split-estate lands included in wilderness areas, would right of access be preserved?
Page 20. Table 2-3 should also show the total acreages of existing mining claims and leases affected by the various alternatives. These figures are given for the individual WSA's and thus could easily be totaled in Table 2-3.
Also, the percentage increase in total area of BLM lands withdrawn from mineral entry under the various alternatives should be tabulated for each affected county and the State.
Page 22. In Table 2-4 the effects of mining on threatened and endangered plants could be mitigated by existing BLM regulations rather than wilderness designation.
Page 27. Table 2-6 guideline A-6 under LCDC goal 5 states: "In conjunction with the inventory of mineral and aggregate resources, sites for removal and processing of such resources should be identified and protected." Alternatives 1 and 2 effectively remove mineral resources from immediate and near-future use. The accessibility of mineral resources for public use should be preserved. LCDC goal 9 seeks to diversify and improve the economy of the State. Withdrawal of lands from mineral entry and leasing reduces the amount of land on which mineral resources could be developed.
Page 32. Table 3-1 should show the total number of acres, the acreage of existing wilderness and other withdrawals, and the amount of land under Federal jurisdiction in each affected county.
Page 41-42. Description of the Ochoco, Blue and Wallowa Mountains province should be expanded, particularily that of the Hells Canyon area.
Page 45-46 and Table 3-6. It is indicated that the mineral potential of the WSAs was rated in part on the basis of data gathered by literature search. References to pertinent documents including geologic maps and the data obtained by BLM staff and contractors should be provided. Sources of information used in the preparation of Table 3-6 should be referenced to the table. Also desirable would be a short discussion of geologic settings in the region that appear favorable for mineral deposits.
Page 57. Add to Table 3-13 the number of acres held by mining claims; economic value unknown.
Page 67. Table 4-5 should also show acreages of existing wilderness within five hours drive of population centers, from Table 3-4 page 42.

1704.22 Page 71-73. Tables 4-10 and 11 show the numbers of acres with high and moderate mineral potential that would be withdrawn from mineral entry under the various alternatives. The DEIS should also discuss the effect mining or the preclusion of mining on the economy.
1704.23 Page 84. Table 4-18 should also indicate decreases in lease value of State lands plus a decrease in mineral exploration activity under wilderness alternatives.
1704.24 Page 85. The statement that "the probability of any of the alternatives having a substantial effect on the economic future of the region is low" is incompatible with the moderate to high ratings given to the mineral potential of many WSAs.
1704.25 Page 94. Management of areas with split-estate inholdings involves the potentially significant problem of the State mineral lease in the Dry Creek Buttes WSA.
1704.26 Page 101. Bentonite and diatomite are mineral materials which are exported to Pacific Rim countries from domestic mines and reduce the balance of trade deficit.
Minerals currently being produced in southeast Oregon include diatomite, bentonite, and zeolite. Large quantities of mercury have been produced in the past. Large deposits of perlite and uranium are known to exist. In recent years many gold occurrences have been discovered in southeast Oregon and western Idaho.
Page 103 Table A-2 There has been substantial bentonite production form deposits located in southeastern Oregon. Malheur County is a major resource area for bentonite.
The Iron Dyke Mine which is adjacent to the Homestead WSA is the site of major copper and gold production from massive sulfide ore.
Diatomite production has begun at the Eagle-Picher operations in Malheur and Harney Counties.
Page 107 Table A-2. There are a number of large perlite occurrences in Oregon but little or no production because deposits in other states are closer to existing markets. Eventually, when deposits elsewhere are depleted, a market for Oregon perlite is likely to develop.
Page 110. The value of cement produced exceeded total agricultural production in Baker County in 1986. The producing company employs 105 people and paid over $500,000 in property taxes in the 1985-1986 tax year.

JDB/sf
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Oregon Department of Fish and Wildlife (ODFW)
Comments on
Bureau of Land Management's Supplement
to Draft Oregon Wilderness Environmental Impact Statement
April 8, 1987

ODFW has reviewed the supplements to the Draft Oregon Wilderness Environmental Impact Statement. ODFW supports the inclusion of the split-estate lands, within the Wilderness Study Area (WSA) boundaries, as part of the DEIS. The inclusions of these lands allow for more consistent management strategies within the WSA's. The addition of the split-estate lands does not require a change in our response to the 1985 Draft, however, we do have comments on other facets of the supplement.

The preferred alternative includes the addition of the upper Leslie Gulch WSA (OR-3-74) and the Slocum Creek WSA (OR-3-75). These two areas complement each other and are a logical choice for wilderness status due to the importance to bighorn sheep and wintering mule deer. ODFW supports wilderness status for these two areas as proposed, by BLM.

General Comments:

1704.27 A review of the affected environment sections leads the reader to conclude that there has apparently been little impact from livestock grazing in the wilderness study areas (WSA). While this may be true in some areas, it is not true in others, primarily in southeast Oregon. More disclosure of the impacts from past livestock grazing is needed. There also needs to be more disclosure on the effect introduced plant species have had on native plant communities.

1704.28 Eighteen of the affected environment sections in the DEIS describe important habitat components for big game, habitat diversity or nongame; yet there is no discussion of those components in the section on environmental consequences. The consequences of a proposed action must be known before an alternative selection can be made.

The WSA's are:

No.	Name	Concern
1-22	Four Craters Lava Bed	deer
1-24	Sand Dunes	the lost forest
1-117	Fish Creek Rim	antelope kidding area, deer
1-132	Guano Creek	antelope, deer
2-73H	Winter Range	kit fox
2-77	Mahogany Ridge	wildlife in general
2-78	Red Mountain	wildlife in general
2-85G	South Fork Donner and Blitzen R.	big game summer range
2-87	Bridge Creek	crucial winter range sage grouse strutting areas, high quality raptor habitat

3-27	Beaver Dam Creek	deer, elk
3-33	Gold Creek	crucial winter range
3-35	Sperry Creek	crucial winter range
3-47	Cedar Mountain	elk
3-59	Owyhee Breaks	deer winter range
3-77B	Wild Horse Basin	wildlife in general
3-110	Lower Owyhee Canyon	wildlife in general

There is no discussion in the Diablo Mountain WSA on snowy plover and the cumulative effect on snowy plover and plover habitat.

Homestead WSA (OR-6-2)

In our 1985 response we recommended that the Homestead WSA be included in the final plan. ODFW strongly urges BLM to adopt this recommendation. In the DEIS BLM states "Most of the WSA is crucial deer winter range with small portions important also to wintering elk." "Because of its topography and numerous riparian zones, the WSA is rich in raptors and other nongame birds." The DEIS also states that the "soils are highly erodable"; there are "many one-of-a-kind plant associations or communities", and "The Snake River Canyon is important not only for its unusual species, but also for its biological diversity."

The unique values and relationships stated above support our recommendation to give the Homestead WSA wilderness status.

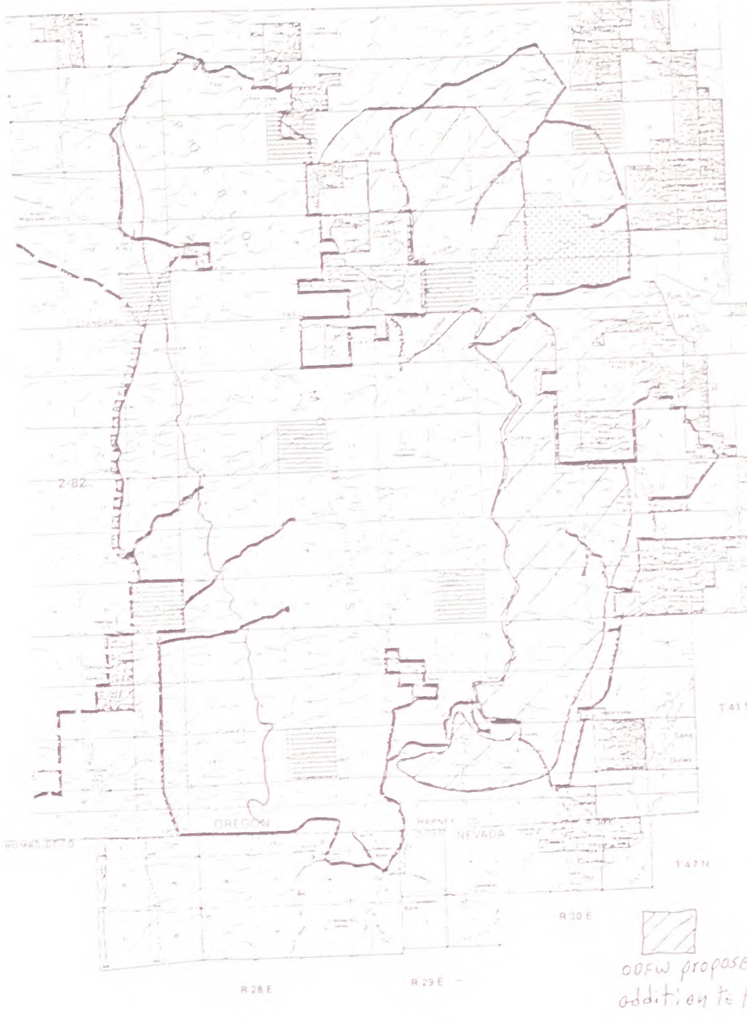
Dry Creek Buttes WSA (OR-3-56)

In our 1985 response we recommended that the Dry Creek Butte's WSA be included in the final plan. ODFW strongly urges BLM to adopt this recommendation. The DEIS incorrectly states "Sheep could be reintroduced although this area has been given a low priority by the Oregon Department of Fish and Wildlife for reintroduction in Malheur County." ODFW has identified the Red Butte area in the southern portion of the WSA as a number one priority reintroduction site for California bighorn sheep. The DEIS identifies a number of special features that are unique to this WSA. These special features plus the high priority to reintroduce California bighorn sheep support the recommendation of wilderness status for this WSA.

Devil's Garden Lava Bed WSA (OR-1-2)

In our 1985 response we recommended that the entire Devil's Garden Lava Bed WSA be given wilderness status. This recommendation is based on the importance of the WSA to wintering mule deer. The DEIS states "Some 5,000 deer use this WSA as all or part of their winter habitat. The area is important for both the excellent thermal cover offered by the lava flows as well as for forage." The DEIS also states "The entire WSA has been designated as the Devil's Garden Area of Critical Environmental Concern (ACEC) to protect the high natural values in the area."

The high natural values in this WSA are the lava flows and the big game winter range. The unique value of this WSA is that the lava flows provide important thermal cover for wintering deer and elk.



Big game winter range in eastern Oregon is a diminishing resource with no substitutes or alternate sources, whereas there are alternate sources and substitutes for commodities produced from the slab lava.

ODFW strongly encourages BLM take these points into consideration and designate the entire WSA for wilderness status.

Pueblo Mountains WSA (OR-2-81)

In our 1985 response we recommended a boundary adjustment in the north-central and south-central portions of the WSA (Map #1). Also recommended was a boundary adjustment on the east side of the preferred alternative. These recommendations were made in light of the importance ODFW places on the winter ranges in the eastern portion of the WSA. The DEIS states "The northeastern part of the study area is recognized as a crucial winter range for antelope."... "The eastern slopes of the WSA have been identified as crucial deer winter range."

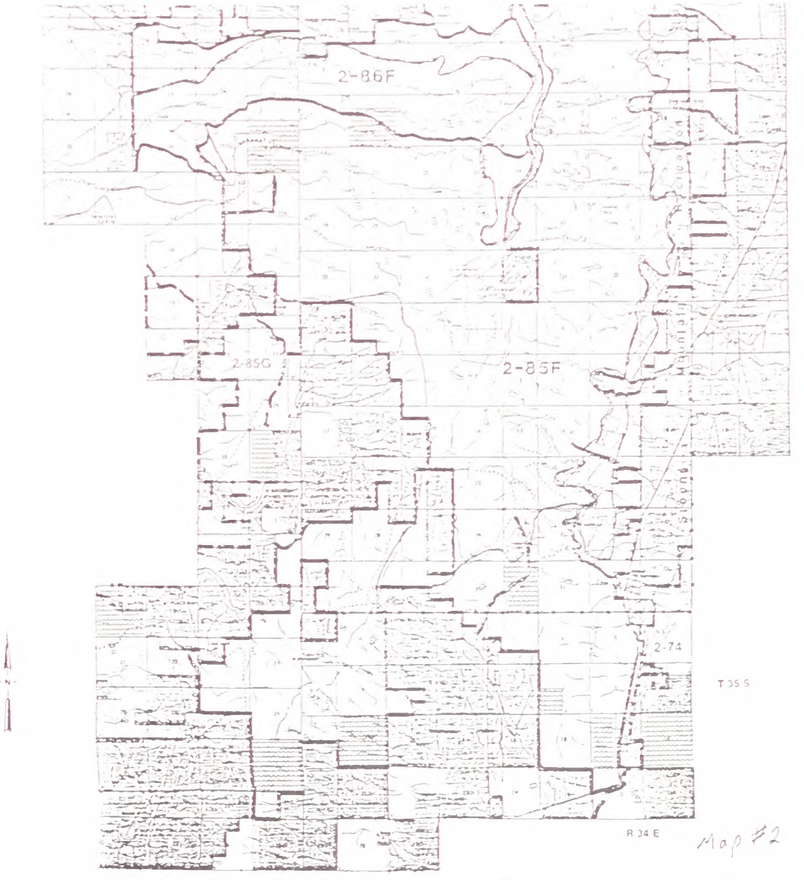
While BLM recognizes the importance of these winter ranges, that importance is not reflected in the preferred alternative. Discussion under the Environmental Consequences Section (page 211) BLM states "Primarily affected would be the crucial deer winter range which occurs along the eastern boundary." On page 212 of Volume III BLM states "Other wildlife population would not be significantly affected under this alternative." This statement refers to the eastern portion of the WSA if the partial alternative were to be implemented. These two statements are contradictive.

BLM has failed to disclose the environmental consequences of the partial alternative on the populations of deer and antelope dependent on the eastern slope winter ranges of Pueblo Mountain WSA. ODFW believes that mineral development in this area would have an adverse and irretrievable impact on the big game populations. Mineral development would also adversely impact the wildlife associated recreation in this area and the fisheries in Van Horn and Cottonwood creeks.

High Steens WSA (OR-2-85F)

In our 1985 response we requested a boundary adjustment on the east side of the preferred alternative. The request was for a boundary to be established at the 4,600 foot elevation from Indian Creek north to Little Willow Creek (see Map #2). This adjustment would allow for protection of key bighorn sheep range. The boundary adjustment would also allow protection of additional habitat for pika, northern water shrew, crucial deer winter range, and Wildhorse cutthroat trout habitat.

L4-12



S. Department of the Interior
Bureau of Land Management

Burns District

High Steens WSA
OR-2-85F and
Little Blitzen Gorge

▨ ODFW Proposed addition to PA

LEGEND

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Under Section 603 of

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▨ State

VICTOR ATIYEH
GOVERNOR

Department of Fish and Wildlife
506 S.W. MILL STREET, P.O. BOX 3503, PORTLAND, OREGON 97208

NOTE TO OREGON WILDERNESS FEIS REVIEWERS

Although this letter was never officially sent to BLM, it is reprinted here as an attachment to ODFW's 1987 comments on the Supplement to the DEIS, since it is referred to several times in those comments.

August 29, 1985

Ron Yockim
Assistant Director
Division of State Lands
1445 State Street
Salem, OR 97310

Dear Ron:

The Oregon Fish and Wildlife Commission adopted a position on the Bureau of Land Management's Oregon Wilderness Draft E.I.S. at their August 16th meeting.

Specifically, the Commission recommended Wilderness designation on those study areas outlined in the staff study except for the Soda Mountain Study Area #11-17. The staff report, modified to reflect Commission action, is attached for your information and use in compiling a response to BLM.

1704.30

In adopting the staff recommendations, the Commission indicated they felt that designation of the land in something less than wilderness might be desirable for best fish and wildlife management, but there are no lesser designations that properly give consideration to this resource and its necessary habitat. The Commission also went on record as preferring to reconsider their endorsement of wilderness designation in favor of a more multiple use category if such a new designation becomes available that provides for adequate fish and wildlife protection.

If you need further information, please contact Mike Weland.

Sincerely,

M L Montgomery

Monty L. Montgomery
Acting Director

mms
c Pat Amedeo

EXHIBIT A

DEPARTMENT FISH AND WILDLIFE **MEMORANDUM**

ATE: July 15, 1985

O: Commission

ROM: Tony Faast, Environmental Management Section

UBJECT: Staff Report - BLM Oregon Wilderness DEIS

Note: This information is in addition to the material previously sent to the Commission on June 18, 1985, regarding the Oregon Wilderness designation issue.

ISSUE

The Bureau of Land Management, U.S. Department of Interior, is soliciting comments on a Draft Environmental Impact Statement (DEIS) on Oregon Wilderness. Seventy-seven Wilderness Study Areas (WSA's) containing some 2.3 million acres on BLM lands, primarily in Eastern Oregon, are being considered for designation as Wilderness.

The issue before the Commission is to consider the affect wilderness designation will have on the Department's management authority and Oregon's Fish and Wildlife resources; and then, based on that consideration, provide a recommendation to the BLM on Wilderness Study Areas to be designated as wilderness.

Wilderness issues, as a matter of ODFW Policy, are to be reviewed by the Fish and Wildlife Commission. A staff presentation on this issue is scheduled before the Commission on Thursday 7 PM, July 25, 1985 in the ODFW Portland headquarters Commission room.

CAPSULE SUMMARY

*	Total WSA acres	2,304,142	(100%)	*
*	BLM Preferred Alternative acres	949,989	(41.2%)	*
*	Staff Recommended acres	989,364	(42.9%)	*

BACKGROUND

DEIS

The Department Staff has provided input to the BLM wilderness designation process beginning with a statewide wilderness inventory in 1979. Information on the quality and quantity of the fish and wildlife resource in each WSA was provided by the Department and has been incorporated into the current Draft EIS now out for review and comment.

The Oregon Wilderness DEIS analyzes several alternatives ranging from "All Wilderness" to "No Wilderness/No Action" for the 77 WSA's being reviewed. The four volume 1,300 page document discussed the environmental consequences of wilderness designation taking into account the effects on:

- Wilderness Values
- Energy and Mineral Development
- Water Quality
- Vegetation
- Wildlife
- Livestock Grazing
- Utility Corridor Routing and Communication Facility Siting
- Wood Products Harvest
- Cultural and Paleontological Resources
- Recreation Use
- Economic Value and Local Income
- Social Conditions

ADEQUACY

Staff review of the DEIS has determined that, with minor technical data oriented exceptions, the information contained in the Environmental statement is accurate and adequately addresses the categories listed above.

BLM WILDERNESS MANAGEMENT POLICY

A discussion of BLM Wilderness management and its implications regarding fish and wildlife management in designated wilderness areas has been before the Commission several times in the past few years. In 1983, in response to a Scoping EIS on WSA's in S.E. Oregon, the Department requested specific information regarding fish and wildlife management activities allowed in designated wilderness areas. In the response from BLM it was apparent that most fish and wildlife management activities, while facing some restriction, would not be prohibited.

However, part of ODFW management activities include habitat preservation and enhancement. Wilderness designation of WSA's were also evaluated as to the potential for maintaining or improving habitat values for fish and wildlife. It is the judgement of the staff that present and/or proposed fish and wildlife management activities would not be significantly affected. In those areas where management would likely be impaired, wilderness designation was not recommended by staff. A BLM summary of wilderness management policy is included for your review. (See Attachment 1).

STAFF REVIEW

Field staff were asked to review WSA's in their district/region using a questionnaire developed for that purpose. Using guideline criteria that included: Key species, key habitats, social and/or management considerations and adjacent land use, biologists reviewed the 77 WSA's for impacts to the fish and wildlife resource. At a field staff review meeting in Burns, using all available information, recommendations were advanced for each WSA. Draft recommendations are attached separately for your review.

PERSPECTIVE

A BLM Public Hearing on the wilderness issue was attended on June 27, 1985 in Burns. A brief summary of comments made at that meeting are as follows:

PRO - proponents of wilderness designation cite the need for ecological diversity, fish and wildlife habitat needs, personal solitude desires, preservation of unique areas for their scenic and aesthetic qualities and wilderness recreational opportunities in general among their reasons for favoring wilderness.

CON - opposition centered on the potential loss of economic opportunity and access. Ranching interests expressed a fear of disruption of historic livestock operation activities through increased government interference among their reasons for opposing wilderness designation.

COMMISSION OPTIONS

Through consideration of social, economic or other factors the Commission has the option to change any or all of the recommendations proposed by staff for the 77 WSA's.

The Commission could also delegate responsibility to respond on this issue to the Director.

Another option is to take no position on the staff recommendation and provide no comment to BLM.

A Commission decision could be rendered at the July 25 meeting or delayed until the August 16 regularly scheduled meeting.

A final Commission decision is needed prior to August 31, 1985 which is the deadline for public comment on the DEIS.

STATISTICAL SUMMARY

Based on fish and wildlife considerations that included, for each Wilderness Study Area,

- Key species of concern,
- Key Habitat Consideration,
- Social and/or Management Considerations and
- Adjacent land uses,

The ODFW Staff recommendation, in response to the U.S. Department of Interior, Bureau of Land Management Oregon Wilderness Draft Environmental Impact Statement, Volumes I-IV April 1985, is as follows:

- Total WSA acres	2,304,142 (100%)
- BLM Preferred Alternative acres	949,989 (41.2%)
- ODFW Staff recommendation for Wilderness	989,354 (42.9%)

- Staff recommendation highlights:
  - . agreement with BLM Preferred Alternative on 69 of 77 WSA's (89%)
  - . of the 8 in which staff does not agree
    - • 2 are recommended for fewer acres (-52,890)
    - • 6 are recommended for additional acres (+92,265)
  - . Staff recommends a total of 39,375 acres more than the BLM Preferred Alternative total for Wilderness designation in Oregon.

STAFF RECOMMENDATIONS - BLM OREGON WILDERNESS DEIS

The Department staff has participated in the process leading to the development of the Draft EIS for Oregon Wilderness prepared by the Bureau of Land Management. As a result of that participation, the discussions in the DEIS regarding fish and wildlife resources are for the most part, complete and accurate.

FORMAT

The Department Staff recommendations are displayed in a table format (Attachment 2) Each WSA is listed, with a matrix displaying both the staff recommendation and the Preferred Alternative (PA) of the BLM. (Note "I" for "Interior Dept." denotes the BLM PA, "O" for "Oregon DFW" denotes the department staff recommendation)

Four categories are designated:

All - denotes all acres within the Wilderness Study Area are recommended.

Enhanced - denotes situations in which WSA boundary changes are recommended in order to enhance area value for wildlife

Partial - denotes any one of several of the BLM alternatives that contain less than all of the WSA but more than none of the WSA.

None - no portion of the WSA recommended as Wilderness.

Acreage figures are displayed for:

WSA - number of acres considered in DEIS for each area.

BLM PA - number of acres contained in the BLM Preferred Alternative.

Staff Rec (+ or - PA) - number of acres in the staff recommendation that are more or less than the BLM's Preferred Alternative. A zero denotes no change, therefore the staff recommendation contains the same number of acres included in the BLM Preferred Alternative.

ODFW Final Rec - Commission action will determine these acreages.

PROCEDURE

In the majority of the WSA's the staff recommendation is simply to concur with the BLM preferred alternative, indicating both our agreement on the fish and wildlife assessment of the area and the recommendation for wilderness designation described as Preferred Alternative.

Those areas in which the ODFW Staff recommendation differs from the BLM preferred alternative, are noted in the table. A brief rationale for the staff recommendation is included under the "comments" section of the table. A more complete discussion of staff recommendations not in agreement with the Preferred Alternative are included below:

WSA's in which Staff Recommendation differs from BLM Proposed Alternative

1-2 Devils Garden

This entire WSA contains high value deer winter range, prime habitat for bobcat, and is part of a bald eagle wintering area. The SW boundary of the WSA has been excluded in the Preferred Alternative to allow for slab lava sales in the area containing the highest quality lava. Due to the high winter range and other wildlife values of this area, the staff recommendation is to add 3,920 acres of the WSA to the BLM Proposed Action.

2-72D Wildcat Canyon

This WSA is a key segment in a good antelope hunting area. Hunter access would be restricted with wilderness designation, limiting access to not only this area but WSA's 272-C and -I as well. Wildlife values would be maintained through PA designation of adjacent WSA's as wilderness (-32,720 acres).

2-81 Pueblo Mountains

Eastern portion of WSA and some additional areas to the North contain bighorn sheep and deer winter range habitat. Water distribution and a variety of habitats found in this WSA make it a high value wildlife area. BLM PA does not include all the area due to conflict resolution with potential mineral resource development. Staff recommends a new wilderness boundary with some additional acres not included in the original WSA to be included as wilderness (+16,480 acres) in order to preserve existing wildlife habitats.

2-85F High Steens

This area is the top of the Steens Mountains and includes part of the steep East Slope of the Steens on the western edge of the Alvord Desert. These slopes are key bighorn sheep range down to an estimated 4,600 foot elevation. This portion of the WSA has been excluded from the PA as conflict resolution for potential mining operations. Staff recommends the PA including the slopes form Indian Creek on the South to Little Willow Creek on the North at the 4,600 foot elevation line as a new boundary for the wilderness (+2,600 acres).

2-86E Blitzen River

Located on the lower elevation NW slopes of the Steens this area is key deer winter range. Potential winter range habitat improvements as well as proposed predator control operations would be affected under wilderness designation. This area is not recommended by Staff for wilderness (-20,170 acres).

3-56 Dry Creek Buttes

Immediately to the west of Lake Owyhee this canyonland area is a high priority bighorn sheep release site. BLM has incorrectly identified this area as having low value as bighorn habitat. The PA recommends no wilderness for the area, however, due to its value as habitat for bighorn sheep. Staff recommends inclusion of the entire WSA as wilderness (+49,880 acres).

3-152, 153, 156, 162 (Trout Creeks complex)

Staff recommends no acreage changes from the Preferred Alternative for these areas. The Trout Creek Mountains area has been managed by ODFW as a limited entry hunting area since 1979. Wilderness designation will provide for the maintenance of wildlife habitat values, however, vehicular hunting access will be severely limited.

In order to maintain the high quality hunting recreational opportunity afforded by this area, the staff recommends that ODFW support the PA conditionally upon maintaining vehicle access to the area by Controlled Hunt Permit holders during big game seasons. This recommendation to be carried out during the formulation of a Wilderness Management Plan developed for these areas by BLM after wilderness designation occurs.

6-2 Homestead

The area is presently unroaded canyon country with stringer timber providing good habitat for deer and elk and a potential bighorn sheep release site. The PA of no wilderness is based on the benefits of mineral exploitation and development. Staff recommends all of WSA be included as wilderness (+13,975 acres) in order to maintain wildlife habitat values.

11-17 Soda Mountain

This area contains high value deer winter range and a mixture of habitats beneficial to wildlife including golden eagles.

This area also complements deer habitat improvement projects in adjacent Agate Flats area and California Fish and Game Department's deer winter range area to the South. Staff recommends all of WSA for wilderness designation (+5,410 acres) in order to maintain wildlife habitat values.

L4-1

SUMMARY OF STATE DEPARTMENT OF FORESTRY'S REVIEW OF THE SUPPLEMENT TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR OREGON WILDERNESS

Soda Mountain WSA

The Department of Forestry concurs with BLM's proposed action alternative to exclude Soda Mountain from wilderness consideration. As was stated in our August 30, 1985 response to BLM's Wilderness DEIS, the Department would not support locking-up productive forest and grasslands in the Soda Mountain site. The Department agrees with BLM's conclusion that Soda Mountain exhibits limited wilderness characteristics.

Wilderness Boundaries

BLM's scattered ownership pattern has created very irregular property lines both in eastern and western Oregon. Many of the WSAs proposed both in the draft and supplement have this irregular pattern. It will be difficult and expensive, we believe, to protect wilderness areas which exhibit this characteristic.

OSDF encourages BLM to strategically locate WSAs using natural geologic features. This will allow for better protection of the site while excluding as much nonfederal land as possible.

Nonfederal Lands

Land use activities on nonfederal properties located within the boundaries of the WSAs should be permitted to continue so long as deterioration to the WSAs doesn't occur. Applying restrictions to these areas could adversely impact the landowners management of his land. Access, even by motorized vehicles should be allowed especially when considering the severe climatic conditions that exists in some WSAs.

BLM should also carefully consider its "let burn" policy in those areas where private land exists. This policy could be devastating to landowners who own property either within or adjacent to a wilderness area.

Access and land uses permitted on State Land Board lands located within a proposed wilderness are a major concern to the state.

Mineral Resources

Upon reviewing the supplement, it seems that an inadequate mineral inventory exists on the areas being proposed for wilderness designation. Since minerals are one of the more important resources found in the WSAs, a comprehensive inventory seems appropriate before these areas are recommended for wilderness.

As was noted in the SDEIS, the U.S. Geological Survey and Bureau of Mines is scheduled to complete a minerals survey in 1988. Before any final EIS on wilderness is published we recommend that BLM delay its final decision until this data is evaluated and incorporated into the final plan.

Designation of WSAs

BLM lands produce needed revenue for the counties plus they supply a multitude of recreational opportunties for the citizens of Oregon.

While wilderness plays an important part in the recreational opportunity spectrum, maintaining economic and social stability must not be overlooked. BLM lands in eastern Oregon offer a variety of important resources including fish and wildlife, timber, minerals, and rangeland.

Wilderness designation in eastern Oregon, according to the SDEIS, will result in a decrease in personal income and revenues returned to the counties. We therefore question the statement in the plan which notes that, "the probability of any of the alternatives having a substantial effect on the economic future of the region is low." Justification for this statement seems to hinge upon the lack of past activities. Potential mineral development has evidently been ignored. Wilderness designations definitely preclude any opportunities for economic growth to occur in the region on these sites.

1704.36 A wilderness study and final designation of particular sites has been interpreted as meaning that those areas found to be unsuitable could be utilized for nonwilderness uses. This unfortunately has not been the case when reexamining the intent and implementation of the Wilderness Act of 1984. Continued pressure is being applied to retain the unsuitable National Forest Wilderness candidate areas as roadless, thus also retaining the option for wilderness at a later date. If these areas remain roadless, severe economic impacts will result for many communities.

1704.36 (cont.) This same outcome is possible for those BLM WSAs now found unsuitable for designation. If BLM restricts resource uses, not only on Wilderness Areas, but also on the unsuitable WSAs, the effect could be devastating to local economies. This becomes a major concern after reviewing the discussion regarding nondesignated WSAs found on page 88 of the SDEIS.

We trust that BLM will continue to be cognizant of the fact that the products of their lands make major contributions to the stability of local economies. Arbitrarily setting aside millions of acres of land for wilderness will not improve economic conditions, especially in eastern Oregon.

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RGB87-02

STATE OF OREGON

INTEROFFICE MEMO

MAR 05 1987
... OF GEOLOGY
& MINERAL INDU...

TO: Donald A. Hull, State Geologist
Department of Geology and Mineral Industry

DATE: March 4, 1987

FROM: Ann Nolan Hanus, State Economist Ann Hanus
Office of Economic Analysis, Executive Department

SUBJECT: Economic Review and Analysis of the Bureau of Land Management's Supplement to the Draft Oregon Wilderness Study Environmental Impact Statement

The Bureau of Land Management's (BLM) supplement to the Draft Oregon Wilderness Environmental Impact Statement includes additional lands that have been restored or added to wilderness study areas (WSAs) through a court decision (Sierra v. Watt) and related agreements, through Interior Board of Land Appeals remand, and through lands acquired since the completion of the original wilderness inventory (1978-81) in Oregon.

Wilderness designation would cause a decrease in economic value and local personal income in most WSAs; however, the decrease would not be substantial. Most of the decline would be due to withdrawal of lands for energy and mineral development. Economic value could also change depending on what proposed projects and grazing increases would be allowed in the wilderness. Commercial timber production would not be significantly affected over the short or long term by any of the alternatives. BLM's economic analysis did not include unknown economic effects of mineral development and of unquantified changes in recreational use.

1704.37 According to BLM, total personal income changes in the 11-county area in central and eastern Oregon would be minor, ranging from a potential reduction of 0.02 percent to a potential increase of 0.07 percent. Its analysis showed the net effect for the 11-county area; consequently, direct economic gains or losses to some individuals could be significant.

If designated wilderness, areas with energy and mineral potential would no longer be available for exploration or production except on mining claims having a valid discovery at the time of designation and on existing leases. All alternatives except the commodity development emphasis and no wilderness/no action alternatives have substantial acreage withdrawals of land with high potential for metals and energy resources. For several of these resources, the nation depends significantly on imports to meet domestic needs.

Livestock grazing at current levels would not be significantly affected by wilderness designation under any of the alternatives since grazing is considered a grandfathered use. Future increases, however, may be limited since some development of new range improvements and implementation of all new vegetative manipulation projects would be precluded under wilderness management.

1704.37 (cont.)

Wilderness designation would have a minor effect on timber harvesting. Foregone opportunities for harvesting would range from 9,680 acres under the all wilderness alternative to no acreage under the no wilderness/no action alternatives. For the preferred alternative, 1,520 acres would be withdrawn and 356 Mbf average annual harvest would be lost.

AHH:nm
3751j

cc: Fred Miller
Jon Yunker
Dan Kennedy

2255

Military Department

2150 FAIRGROUNDS ROAD N.E., SALEM, OREGON 97303-3241

April 20, 1987

Oregon Wilderness Studies
Bureau of Land Management
P.O. Box 2965
Portland, Oregon 97200
ATTN: EIS Team Leader

Gentlemen:

We recently received a copy of a letter dated March 20, 1987, addressed to you from the Idaho Air National Guard. We have not received any of the background information concerning the Wilderness area studies.

2255.1

At the present time, the Oregon Air National Guard is using the low-level routes through Eastern Oregon on an average of two flights per day. The actual flight may be more than two on some days and none on other days. These routes are required for our air crews to maintain flight proficiency for mission readiness.

The Oregon Air National Guard has an air defense mission with the Air Force. As part of this mission, the Oregon Air National Guard maintains four F-4C aircraft on full-time alert -- two in Portland and two in Klamath Falls -- on 24-hour 7 days a week alert status. Also, the 114th TFTS at Kingsley Field, Klamath Falls, Oregon, has a requirement to use the existing low-level routes. Their need for use will increase as both the 142d FIG at Portland and the 114th TFTS at Klamath Falls transition to the F-16 aircraft in calendar year 1988.

Both the 142d FIG and the 114th TFTS have reviewed the 20 March 1987 letter submitted by the Idaho Air National Guard and concur in that letter.

If more specific information is needed please do not hesitate to contact us.

Sincerely,

Gary E. Lockwood
Colonel, Oregon Army National Guard
Deputy Chief of Staff

Responses To Letters From State Agencies

Response 490.1: BLM-maintained roads recommended for closure under some alternatives in the EIS are primarily roads that are primitive in nature and are not sole access to private land or necessary for administration of an area. Descriptions of anticipated management actions under the various alternatives for each WSA project continued periodic use of the roads by livestock operators for access by heavy equipment to maintain existing facilities.

Response 490.2: The appendix covering the Disaster Peak WSA recognizes resource potentials and projects resource uses in the WSA. Impacts to the resources and use projections are addressed in that appendix. Section 5 of the appendix provides rationale for the proposed action. In Section 2 of the appendix, under Energy and Mineral Development Actions discussions, a variety of factors relative to resource occurrence and development potentials are described that lead to a projection that no geothermal development of the study area is likely to occur in the foreseeable future. In addition, the only range improvement proposed for the WSA involves a riparian fence that is projected to be constructed regardless of wilderness designation of the area. Therefore, no substantial resource conflicts are envisioned between geothermal resource/range developments and wilderness designation of the Disaster Peak WSA.

Response 490.3: The existence of mining claims and an assessment of mineral potential for occurrence were considered in the development of mineral development scenarios for the Diaster Peak WSA. This information was then considered in adjusting suitable boundaries under the proposed action.

Response 490.4: This information has been considered in the analysis of impacts on special wilderness features and on recreation use.

Response 986.1: As the officially designated WSA, only the 5,640-acre Soda Mountain Wilderness Study Area (OR-11-17) is being studied for wilderness and analyzed in this EIS.

Response 986.2: Impacts on timber harvest and on local personal income are analyzed in this FEIS. Impacts based on potential changes in visibility restrictions resulting from wilderness designation of the Soda Mountain WSA are not addressed in this EIS. The Clean Air Act specifically gives authority to States, for redesignation to Class I, for wilderness areas greater than 10,000 acres only. Since the Soda Mountain WSA is only 5,640 acres in size, air quality restrictions were not considered germane to the wilderness issue.

Response 1264.1: These factors were considered in the analysis of impacts in the EIS and in development of the proposed action.

Response 1335.1: As the Wilderness Management Policy does not specifically prohibit low level military overflights, and, in fact, makes provision for "essential military missions," the impacts of these short-duration low level flights on opportunities for solitude over much of southeastern Oregon were considered in developing the proposed actions for BLM WSAs.

Response 1704.1: US Geological Survey and Bureau of Mines mineral surveys are required by the Wilderness Act of 1964 to be conducted on areas recommended for wilderness designation by the Secretary of the Interior. As the survey reports require a great deal of lead time for inventory and analysis, the mineral surveys that you refer to are being conducted, in advance of the Secretary's final recommendations, on areas preliminarily recommended as suitable in the EIS proposed action. These surveys are scheduled to be completed for Oregon WSAs in 1990.

Although the mineral reports are separate from the EIS process, intended by Congress to be available for Congressional review and deliberations on pertinent wilderness legislation, completed reports were used by BLM in the EIS process. As USGS has made reports available, the information has been utilized, along with BLM's existing Geology-Energy-Minerals (GEM) reports for each WSA, in the development of the FEIS proposed action and energy and mineral development scenarios and in impact analyses.

In addition, as the reports become available, a 60-day comment period is being provided by USGS/Bureau of Mines to allow input on the technical content of the reports. Public notification, including notification of DOGAMI, has been and will continue to be provided as each series of reports is released.

Response 1704.2: The FEIS now includes scenarios of projected development (e.g., mineral, energy, timber, livestock, wildlife and utility corridor development) in each WSA and focuses impact discussions on those projections. Anticipated impacts on specific wildlife habitat components and wildlife populations are described in each appendix, as well as consistency of the proposed action with ODFW objectives in pertinent wildlife management units.

Response 1704.3: The degree to which potential wilderness boundaries would be identifiable on the ground was a consideration in development of the proposed action, and it is discussed in Section 5 of each appendix under Manageability of the Area as Wilderness.

Chapter 2 of the Statewide Volume of this EIS contains a summary of, and reference to, BLM's Wilderness Management Policy (September 1981). It addresses existing grazing use and use of motor vehicles. Comments received on the EIS relating to misinformation regarding road closures are responded to in the following summary and analysis of public comments section.

The appendices describe in detail the impact of restricted motor vehicle use on recreation in the Impacts on Recreation Use sections under each alternative.

Response 1704.4: The Oregon Scenic Waterways designations for these rivers, and their outstanding recreational value, have been acknowledged in the EIS and were considered in developing proposed actions and in impact analyses for those WSAs.

Response 1704.5: See Response 1704.1 regarding USGS and Bureau of Mines surveys and use of GEM reports in development of the EIS proposed action and in impact analysis. The WSA-specific appendices also address potential energy and mineral development of split-estate lands and the impacts of precluding such development if the mineral estate is acquired within a designated wilderness. State of Oregon consistency review of BLM's final recommendations will be provided before the Secretary of Interior forwards wilderness suitability recommendations to the President. DOGAMI's input will continue to be sought on the technical content of the USGS/Bureau of Mines reports.

Response 1704.6: Addendum A-2, Mineral Supply and Commodities Information, provides a background, by mineral commodity, of production, demand and occurrences in Oregon. In addition, each WSA-specific appendix identifies the presence of any active mining in the immediate vicinity of a WSA.

Response 1704.7: The impacts on local personal income sections of the FEIS Statewide Volume and Appendices now indicate that projected development of energy and mineral resources would cause an increase in local personal income. However, actual dollar values could not be estimated for reasons identified in Addendum 1, Local Personal Income Related to Resource Outputs.

Response 1704.8: This information has been utilized in development of energy and mineral development projections in the FEIS and in development of the proposed action and impact analyses.

Response 1704.9: See Response 1704.5 regarding split-estate lands. Private inholdings are similarly addressed in the EIS. The Wilderness Management Policy provides for reasonable access to valid existing claims and leases.

Response 1704.10: This information has been utilized in developing the energy and mineral development scenarios described in the EIS and in development of the proposed action and impact analyses.

Response 1704.11: Such influences were considered when developing energy and mineral development scenarios for the WSAs with existing claims and leases.

Response 1704.12: In the FEIS, this table now only shows the Federal land acres under study in each WSA. Acres of split-estate and non-Federal surface ownership within WSA boundaries are identified in Section 1 of each appendix.

Response 1704.13: The Wilderness Management Policy allows reasonable access to non-Federal inholdings, including state and private lands and non-Federal mineral estate. BLM must provide a degree of access that is commensurate with the reasonable use and enjoyment of the non-Federal estate.

Response 1704.14: The acreages of existing mining claims and mineral leases were not calculated for each WSA. The appendices, instead, identify the numbers of claims and leases existing as of a particular date.

The EIS identifies the total acres withdrawn by wilderness designation under each alternative and indicates acres already withdrawn through legislation or existing plans. As the total WSAs could affect mineral development on only 4 percent of Oregon lands (17 percent of BLM-administered lands) and the proposed action would effect only 2 percent of Oregon lands (7 percent of BLM-administered lands in Oregon), the percentage of increased withdrawals was not considered to be, by itself, a significant issue. The FEIS, instead, focuses its analysis of impacts to energy and mineral resources on withdrawals of the areas with moderate or high potential for occurrences of mineral commodities and on projected development of those commodities.

Response 1704.15: Table 2-4 has been revised. The Impacts on Vegetation discussions in Chapter 4 indicate that required mitigation and monitoring can minimize or avoid impacts to plant species of special interest.

Response 1704.16: This information has been acknowledged.

Response 1704.17: Such information was not considered relevant to the intent of Table 3-1, which merely indicates how much acreage is being studied in each county for purposes of describing the General Environment of the EIS area.

Response 1704.18: No substantive information has been provided by the comment. The WSA-specific appendices provide the site-specific detail needed to analyze the alternatives for each WSA.

Response 1704.19: The energy and mineral development section of the Affected Environment chapter references Geology-Energy-Mineral (GEM) Reports used by BLM and the References section of the EIS lists each GEM report. These reports, which provide the detailed geologic information and sources of information that you have requested, are readily available for public review.

Response 1704.20: See Response 1704.14 regarding mining claim acreages. Economic value is no longer considered as an issue in the EIS for reasons identified in Addendum 1, Local Personal Income Related to Resource Outputs.

Response 1704.21: Since the information is depicted in the Chapter 3 table, repetition in Chapter 4 was considered unnecessary.

Response 1704.22: See Response 1704.7.

Response 1704.23: See Response 1704.20 regarding economic value.

Response 1704.24: See Response 1704.7.

Response 1704.25: Wilderness manageability related to projected mineral exploration and development of State-owned mineral estate in the Dry Creek Buttes WSA is discussed in the appendix for that WSA (OR-3-56).

Response 1704.26: This information has been considered in development of this FEIS.

Response 1704.27: The FEIS now includes discussions, in the pertinent Affected Environment sections of the WSA-specific appendices, of naturalness, vegetation and watershed conditions that relate to existing livestock use. The vegetation sections also address changes in plant species composition in the various WSAs.

Response 1704.28: The Statewide Volume focuses analysis of impacts in a general way on overall wildlife habitat and populations with some emphasis on riparian habitat, bighorn sheep and fish reintroduction, and special status wildlife species. The WSA-specific appendices provide the detailed analysis of impacts on important habitat components and specific wildlife populations and conditions. The appendices identify impacts anticipated as a result of projected actions described under each alternative. The Diablo Mountain Appendix (OR-1-58) now addresses the snowy plover.

Response 1704.29: This information has been considered in developing FEIS proposed actions for each of the WSAs and for impact analysis purposes.

Response 1704.30: This information and the information contained in the attachment (ODFW Staff Report) was considered in developing FEIS proposed actions for each of the WSAs and utilized in the analysis of impacts.

Response 1704.31: See the Soda Mountain appendix (OR-11-17) for rationale for revising the proposed action to All Wilderness.

Response 1704.32: BLM considered boundary configurations and identifiability of boundaries on the ground when developing proposed actions for each WSA. These factors are addressed in Section 5 of each appendix under Wilderness Manageability and Rationale for the Proposed Action.

Response 1704.33: The Wilderness Management Policy provides for continued reasonable use and enjoyment of non-Federal lands within wilderness boundaries, as well as access for such use.

Fire management under BLM's Wilderness Management Policy takes into account potential threats to lives or personal property in the guidelines for fire suppression within wilderness areas.

Response 1704.34: See Response 1704.1.

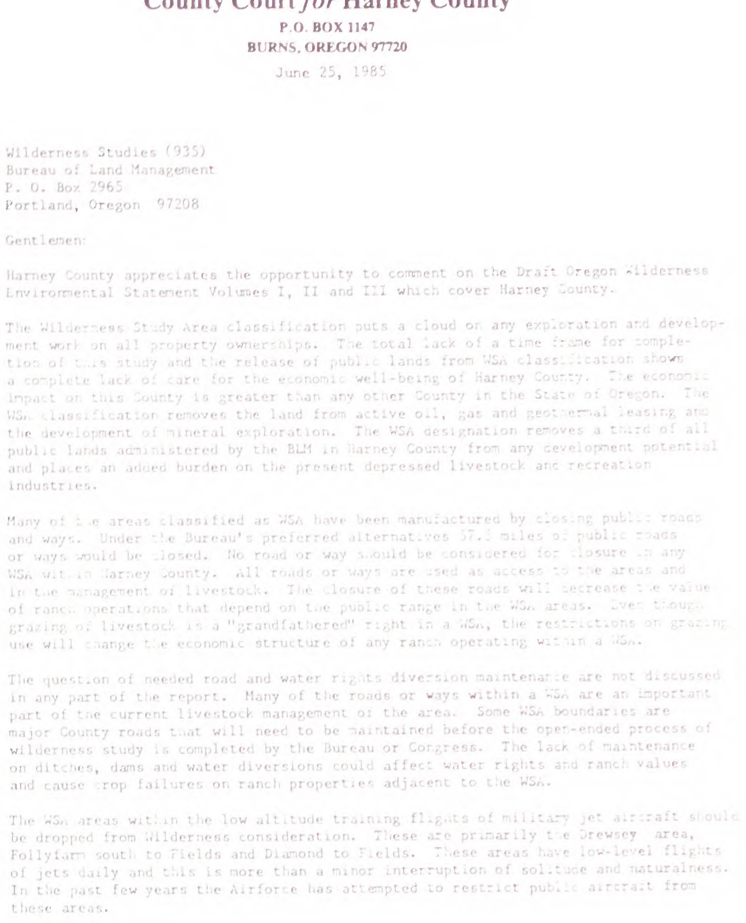
Response 1704.35: This information has been utilized in the FEIS analysis of impacts on local personal income. See Response 1704.7 regarding mineral development contributions to local personal income.

Response 1704.36: BLM assumes that lands officially released by Congress will revert to management guidelines under existing land use plans. It should be noted that Congress makes the final decision regarding wilderness designation or release and that the Federal Land Policy and Managment Act of 1976 requires that all WSAs be managed to prevent impairment of wilderness values until they are either formally designated or released by Congress.

Response 1704.37: The FEIS now includes updated data and analyses with respect to the economic factors and conclusions summarized in your report.

Response 2255.1: See Response 1335.1.

Letters From Local Governments



County Court *for* Harney County
P.O. BOX 1147
BURNS, OREGON 97720

June 25, 1985

Wilderness Studies (935)
Bureau of Land Management
P. O. Box 2965
Portland, Oregon 97208

Gentlemen:

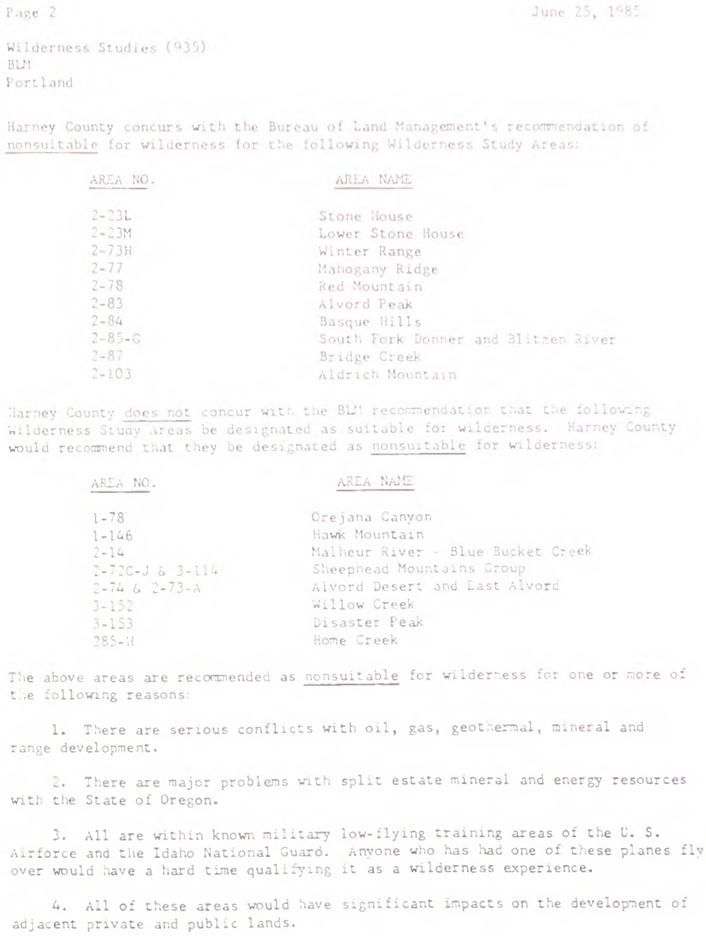
Harney County appreciates the opportunity to comment on the Draft Oregon Wilderness Environmental Statement Volumes I, II and III which cover Harney County.

The Wilderness Study Area classification puts a cloud on any exploration and development work on all property ownerships. The total lack of a time frame for completion of this study and the release of public lands from WSA classification shows a complete lack of care for the economic well-being of Harney County. The economic impact on this County is greater than any other County in the State of Oregon. The WSA classification removes the land from active oil, gas and geothermal leasing and the development of mineral exploration. The WSA designation removes a third of all public lands administered by the BLM in Harney County from any development potential and places an added burden on the present depressed livestock and recreation industries.

Many of the areas classified as WSA have been manufactured by closing public roads and ways. Under the Bureau's preferred alternatives 57.5 miles of public roads or ways would be closed. No road or way should be considered for closure in any WSA within Harney County. All roads or ways are used as access to the areas and in the management of livestock. The closure of these roads will decrease the value of ranch operations that depend on the public range in the WSA areas. Even though grazing of livestock is a "grandfathered" right in a WSA, the restrictions on grazing use will change the economic structure of any ranch operating within a WSA.

The question of needed road and water rights diversion maintenance are not discussed in any part of the report. Many of the roads or ways within a WSA are an important part of the current livestock management of the area. Some WSA boundaries are major County roads that will need to be maintained before the open-ended process of wilderness study is completed by the Bureau or Congress. The lack of maintenance on ditches, dams and water diversions could affect water rights and ranch values and cause crop failures on ranch properties adjacent to the WSA.

The WSA areas within the low altitude training flights of military jet aircraft should be dropped from Wilderness consideration. These are primarily the Drewsey area, Follyfarm south to Fields and Diamond to Fields. These areas have low-level flights of jets daily and this is more than a minor interruption of solitude and naturalness. In the past few years the Airforce has attempted to restrict public aircraft from these areas.



Page 2 June 25, 1985

Wilderness Studies (935)
BLM
Portland

Harney County concurs with the Bureau of Land Management's recommendation of nonsuitable for wilderness for the following Wilderness Study Areas:

AREA NO.	AREA NAME
2-23L	Stone House
2-23M	Lower Stone House
2-73H	Winter Range
2-77	Mahogany Ridge
2-78	Red Mountain
2-83	Alvord Peak
2-84	Basque Hills
2-85-G	South Fork Donner and Blitzen River
2-87	Bridge Creek
2-103	Aldrich Mountain

Harney County does not concur with the BLM recommendation that the following Wilderness Study Areas be designated as suitable for wilderness. Harney County would recommend that they be designated as nonsuitable for wilderness:

AREA NO.	AREA NAME
1-78	Orejana Canyon
1-146	Hawk Mountain
2-14	Malheur River - Blue Bucket Creek
2-72C-J & 3-114	Sheephead Mountains Group
2-74 & 2-73-A	Alvord Desert and East Alvord
3-152	Willow Creek
3-153	Disaster Peak
285-H	Home Creek

The above areas are recommended as nonsuitable for wilderness for one or more of the following reasons:

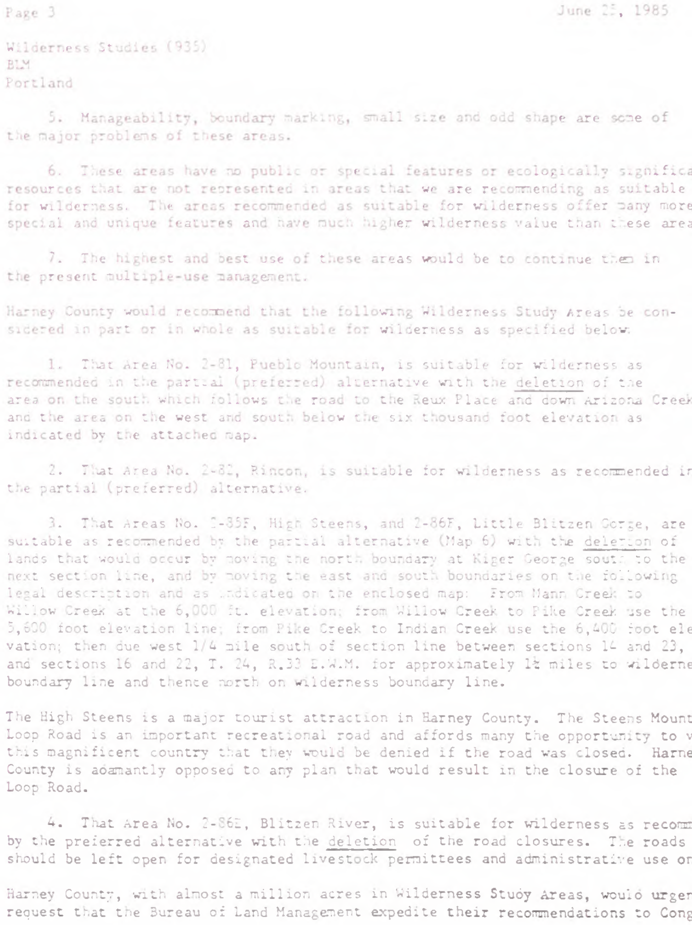
1. There are serious conflicts with oil, gas, geothermal, mineral and range development.

2. There are major problems with split estate mineral and energy resources with the State of Oregon.

3. All are within known military low-flying training areas of the U. S. Airforce and the Idaho National Guard. Anyone who has had one of these planes fly over would have a hard time qualifying it as a wilderness experience.

4. All of these areas would have significant impacts on the development of adjacent private and public lands.

173.4 (cont.)



Page 3 June 25, 1985

Wilderness Studies (935)
BLM
Portland

5. Manageability, boundary marking, small size and odd shape are some of the major problems of these areas.

6. These areas have no public or special features or ecologically significa resources that are not represented in areas that we are recommending as suitable for wilderness. The areas recommended as suitable for wilderness offer many more special and unique features and have much higher wilderness value than these area

7. The highest and best use of these areas would be to continue them in the present multiple-use management.

Harney County would recommend that the following Wilderness Study Areas be considered in part or in whole as suitable for wilderness as specified below:

1. That Area No. 2-81, Pueblo Mountain, is suitable for wilderness as recommended in the partial (preferred) alternative with the deletion of the area on the south which follows the road to the Reux Place and down Arizona Creek and the area on the west and south below the six thousand foot elevation as indicated by the attached map.

2. That Area No. 2-82, Rincon, is suitable for wilderness as recommended ir the partial (preferred) alternative.

3. That Areas No. 2-85F, High Steens, and 2-86F, Little Blitzen Gorge, are suitable as recommended by the partial alternative (Map 6) with the deletion of lands that would occur by moving the north boundary at Kiger George south to the next section line, and by moving the east and south boundaries on the following legal description and as indicated on the enclosed map: From Mann Creek to Willow Creek at the 6,000 ft. elevation; from Willow Creek to Pike Creek use the 5,600 foot elevation line; from Pike Creek to Indian Creek use the 6,400 foot ele vation; then due west 1/4 mile south of section line between sections 14 and 23, and sections 16 and 22, T. 24, R.33 E.W.M. for approximately 1½ miles to wilderne boundary line and thence north on wilderness boundary line.

The High Steens is a major tourist attraction in Harney County. The Steens Mount Loop Road is an important recreational road and affords many the opportunity to v this magnificent country that they would be denied if the road was closed. Harne County is adamantly opposed to any plan that would result in the closure of the Loop Road.

4. That Area No. 2-86E, Blitzen River, is suitable for wilderness as recomm by the preferred alternative with the deletion of the road closures. The roads should be left open for designated livestock permittees and administrative use or

Harney County, with almost a million acres in Wilderness Study Areas, would urger request that the Bureau of Land Management expedite their recommendations to Cong

173.4 (cont.)

Wilderness Studies (935)
BLM
Portland

so that this wilderness issue may be promptly resolved. The continued management of a million acres as if it is wilderness is having a significant detrimental effect on the economy of Harney County.

Harney County thanks you for this opportunity to comment and requests that we be kept informed of the progress of this important issue.

Sincerely,

HARNEY COUNTY COURT

Dale White
Dale White, County Judge

Earl Tiller
Earl Tiller, County Commissioner

Frank G. White
Frank G. White, County Commissioner

DW:ed

247

County Court *for* Harney County
P.O. BOX 1147
BURNS, OREGON 97720

August 15, 1985

Wilderness Studies (935)
Bureau of Land Management
P. O. Box 2965
Portland, Oregon 97208

247.1

This letter is to expand and further illustrate the statements of the Harney County Court concerning the impact of low altitude training flights by military jet aircraft over many of the proposed wilderness areas in Harney County contained in our letter of June 25, 1985.

Enclosed is a letter from the State of Oregon Aeronautics Division indicating that based on information they received from the Federal Aviation Administration that there are an annual estimated total of 5,184 low-level flights over the areas proposed for wilderness designation. These are training flights from Idaho National Guard aircraft stationed at Boise, Idaho, U. S. Airforce aircraft stationed at Mountain Home Airforce Base, Idaho, and Naval Airforce aircraft stationed at Whidbey Naval Airbase, Washington.

Enclosed is a map submitted by the Oregon Aeronautics Division which indicates the flight routes and the approximate number of annual operations over each particular route. The operations would indicate a minimum of 1.5 to a maximum of 5.6 low-level jet flights per day over many of the proposed wilderness study areas.

It is Harney County's position that these levels of flights on a daily basis are more than a minor interruption of solitude and naturalness. Those proposed wilderness areas in these flight areas should be disqualified for wilderness designation.

It appears to Harney County that there would be especially serious impairments for wilderness for the following wilderness study areas:

2-23L	Stonehouse
2-23M	Lower Stonehouse
2-72C to J and 3-114	Sheepheads Mountain Group
2-73H	Winter Range
2-74 and 2-73A	Alvord Desert and East Alvord Desert
2-81	Pueblo Mountain

It also appears that there will be meaningful, if less serious, impairment for wilderness for the following wilderness study areas:

2-85F	High Steens
2-86E	Blitzen River
2-86F	Little Blitzen Gorge

247.1 (cont.)

Wilderness Studies (935)
BLM
Portland

It is Harney County's opinion that these low-level training flights so degrade the environment as to a meaningful wilderness experience that all of the above WSAs except for 2-81, 2-85F, 2-86E and 2-86F should be eliminated from wilderness consideration. WSAs 2-81, 2-85F, 2-86E and 2-86F should be modified to conform to the Court's recommendation in our letter of June 25, 1985.

Harney County again appreciates the opportunity to comment and request that you carefully evaluate the effect of these low-level jet training flights as to their effect on solitude and naturalness and the ability to have a wilderness experience.

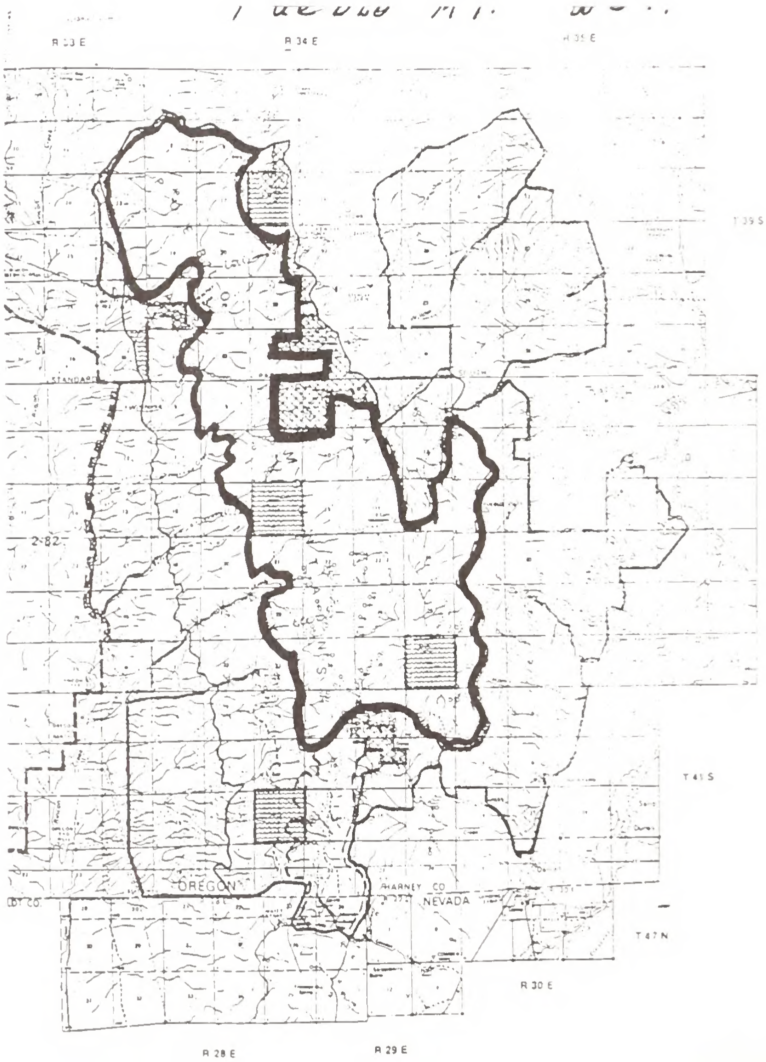
Sincerely,

Dale White
Dale White
Harney County Judge

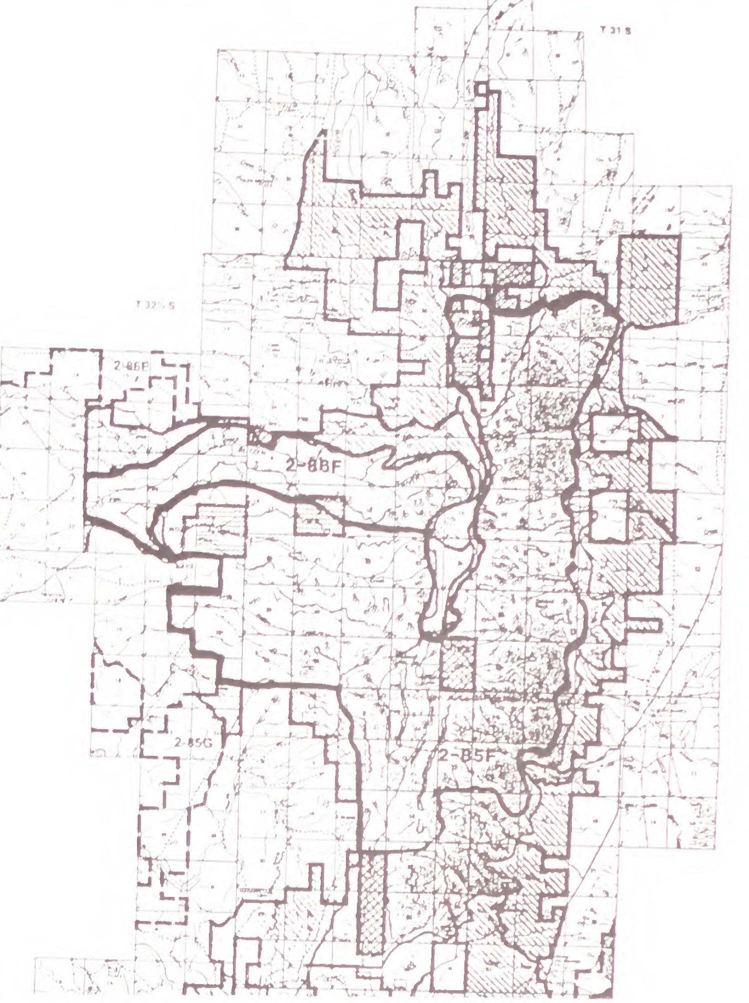
DW:ed

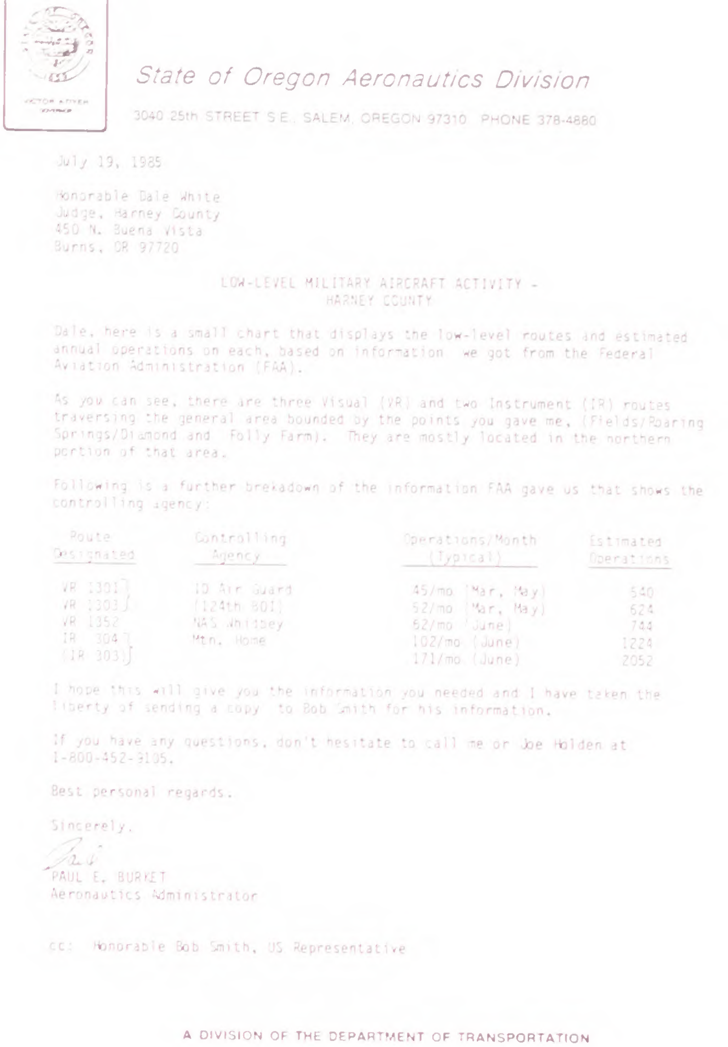
cc: Ed Zajonc, Division of State Lands
Joshua L. Warburton, Burns District Manager
Bureau of Land Management

Enclosures



HIGH Steens And LITTLE BLITZEN Gorge – WSA





VICTOR ATIYEH
GOVERNOR

State of Oregon Aeronautics Division

3040 25th STREET S.E., SALEM, OREGON 97310 PHONE 378-4880

July 19, 1985

Honorable Dale White
Judge, Harney County
450 N. Buena Vista
Burns, OR 97720

LOW-LEVEL MILITARY AIRCRAFT ACTIVITY -
HARNEY COUNTY

Dale, here is a small chart that displays the low-level routes and estimated annual operations on each, based on information we got from the Federal Aviation Administration (FAA).

As you can see, there are three Visual (VR) and two Instrument (IR) routes traversing the general area bounded by the points you gave me, (Fields/Roaring Springs/Diamond and Folly Farm). They are mostly located in the northern portion of that area.

Following is a further brekadown of the information FAA gave us that shows the controlling agency:

Route Designated	Controlling Agency	Operations/Month (Typical)	Estimated Operations
VR 1301	ID Air Guard (124th 801)	45/mo (Mar, May)	540
VR 1303		52/mo (Mar, May)	624
VR 1352	NAS Whidbey	62/mo (June)	744
IR 304	Mtn. Home	102/mo (June)	1224
(IR 303)		171/mo (June)	2052

I hope this will give you the information you needed and I have taken the liberty of sending a copy to Bob Smith for his information.

If you have any questions, don't hesitate to call me or Joe Holden at 1-800-452-3105.

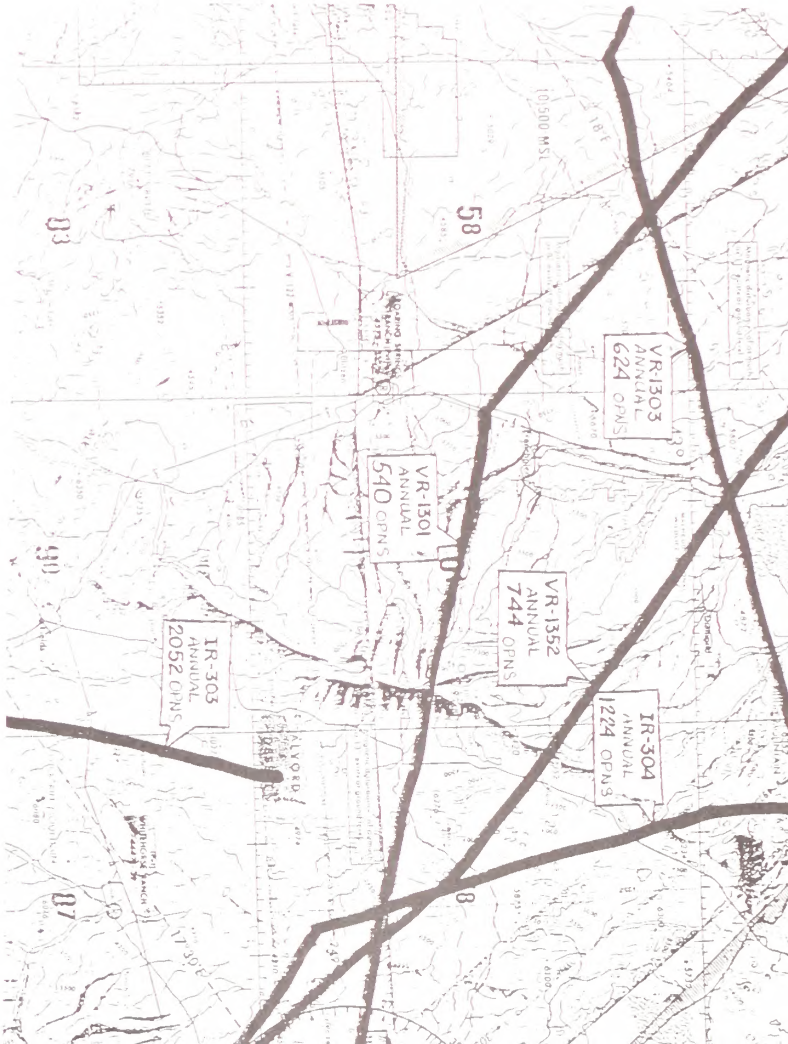
Best personal regards.

Sincerely,

PAUL E. BURKET
Aeronautics Administrator

cc: Honorable Bob Smith, US Representative

A DIVISION OF THE DEPARTMENT OF TRANSPORTATION



Responses To Letters From Local Government Agencies

Response 173.1: Impacts on local personal income were considered and analyzed in the development of the FEIS proposed action and impact analyses. However, with respect to WSA designations, it should be noted that release of areas from WSA status can only be accomplished through an Act of Congress, in accordance with the Federal Land Policy and Management Act of 1976.

Response 173.2: Periodic use of motorized vehicles on closed roads and ways by livestock operators is provided for under the Wilderness Management Policy where there are no practical alternatives to such use. Such use is now projected under the descriptions of the alternatives in the WSA-specific appendices.

Response 173.3: See Response 1335.1 under Letters From State Agencies.

Response 173.4: This information was considered in the development of the FEIS proposed actions and impact analyses for the pertinent WSAs. Alternatives similar to those that you propose have been developed and analyzed in this final EIS, including the Steens Loop Road closure issue and boundary adjustments for Pueblo Mountains.

Response 247.1: See Response 1335.1 under Letters From State Agencies.

Letters From Indian Tribes

BURNS PAIUTE RESERVATION
P. O. BOX 71 BURNS, OREGON 97720
PHONE (503) 573-2088

August 27, 1985

Wilderness Studies (935)
Bureau of Land Management
P.O. Box 2965
Portland, Oregon 97208

RE: Draft Oregon Wilderness Environmental Statement
Volumes I, II, and III

Dear Sirs,

The Burns Paiute Reservation appreciates the opportunity to comment on the Draft Oregon Wilderness Environmental Statement Volumes I, II, and III which covers Harney County.

The Wilderness Study Area classification puts a cloud on any exploration and development work on all property ownerships. The total lack of a time frame for completion of this study and the release of public lands from WSA classification shows a complete lack of care for the economic well-being of Harney County. The economic impact on this County is greater than any other County in the State of Oregon. The WSA classification removes the land from active oil, gas and geothermal leasing, and the development of mineral exploration. The WSA designation removes a third of all public lands administered by the BLM in Harney County from any development potential and places an added burden on the present depressed livestock and recreation industries.

Many of the areas classified as WSA have been manufactured by closing public roads and ways. Under the Bureau's preferred alternatives, 57.5 miles of public roads or ways will be closed. No roads or ways should be considered for closure in any WSA within Harney County. All roads or ways are used as access to the areas and in the management of livestock. The closure of these roads will decrease the value of ranch operations that depend on the public range in the WSA areas. Even though grazing of livestock is a "grandfathered" right in a WSA, the restrictions on grazing use will change the economic structure of any ranch operating within a WSA.

634.2 (cont.) The question of needed road and water rights diversion maintenance are not discussed in any part of the report. Many of the roads or ways within a WSA are an important part of the current livestock management of the area. Some WSA boundaries are major County roads that will need to be maintained before the open-ended process of wilderness study is completed by the Bureau or Congress. The lack of maintenance on ditches, dams, and water diversions could affect water rights and ranch values and cause crop failures on ranch properties adjacent to the WSA.

634.3 The WSA areas within the low altitude training flights of military jet aircraft should be dropped from Wilderness consideration. These are primarily the Drewsey area, Follyfarm south of Fields, and Diamond to Fields. These areas have low-level flights of jets daily and this is more than a minor interruption of solitude and naturalness. In the past few years, the Airforce has attempted to restrict public aircraft from these areas.

The Burns Paiute Tribe concurs with the Bureau of Land Management's recommendation of nonsuitable for wilderness in the following Wilderness Study Areas:

AREA NO.	AREA NAME
2-23L	Stone House
2-23M	Lower Stone House
2-73H	Winter Range
2-77	Mahogany Ridge
2-78	Red Mountain
2-83	Alvord Peak
2-84	Basque Hills
2-85-G	South Fork Donner and Blitzen River
2-87	Bridge Creek
2-103	Aldrich Mountain

634.4 The Burns Paiute Tribe does not concur with the BLM recommendations that the following Wilderness Study areas be designated as suitable for wilderness. The Burns Paiute Tribe would recommend that they be designated as nonsuitable for wilderness:

AREA NO.	AREA NAME
1-76	Orejana Canyon
1-146	Hawk Mountain
2-14	Malheur River - Blue Bucket Creek
2-72C-J & 3-114	Sheephead Mountains Group
2-74 & 2-73-A	Alvord Desert and East Alvord
3-152	Willow Creek
3-153	Disaster Peak
285-H	Home Creek

The above areas are recommended as nonsuitable for wilderness for one or more of the following reasons:

1. There are serious conflicts with oil, gas, geothermal, mineral and range development.
2. There are major problems with split estate mineral and energy resources with the State of Oregon.
3. All are within known military low-flying training areas of the U.S. Airforce and the Idaho National Guard. Anyone who has one of these planes flying over would have a hard tim qualifying it as a wilderness experience.
4. All of these areas would have significant impacts on the development of adjacent private and public lands.
5. Manageability, boundary marking, small size and odd shape are some of the major problems of these areas.
6. These areas have no public or special features or ecologically significant resources that are not represented i areas that we are recommending as suitable for wilderness. The areas recommended as suitable for wilderness offer man more special and unique features and have much higher wilderness value than these areas.
7. The highest and best use of these would be to continue the in the present multiple-use management.

634.4 (cont.) The Burns Paiute Tribe would recommend that the following Wilderness Study Areas be considered in part or in whole as suitable fo wilderness as specified below:

1. That Area No. 2-81, Pueblo Mountain, is suitable for wilderness as recommended in the partial (preferred) alternative wit the deletion of the area on the south which follows the road t the Reux Place and down Arizona Creek and the area on the wes and south below the six thousand foot elevation as indicated b the attached map.

2. That Area No. 2-82, Rincon, is suitable for wilderness as recommended in the partial (preferred) alternative.

3. That Areas No. 2-85F, High Steens, and 2-86F, Little Blitze Gorge, are suitable as recommended by the partial alternativ (Map 6) with the deletion of lands that would occur by moving the north boundary at Kiger Gorge south to the next section line, an by moving the east and south boundaries on the following legal description and as indicated on the enclosed map: From Mann Creek to Willow Creek at the 6,000 ft. elevation; from Willo Creek to Pike Creek, use the 5,600 ft. elevation line; from Pike Creek to Indian Creek, use the 6,400 ft. elevation; then du west 1/4 mile south of section line between sections 14 and 23 and sections 16 and 22, T.24, R.33 E.W.M. for approximately 1 1/ miles to wilderness boundary line and thence north on wildernes boundary line.

The High Steens is a major tourist attraction in Harney County. The Steens Mountain Loop Road is an important recreational road an affords many the opportunity to view this magnificent country that they would be denied if the road was closed. The Burns Paiute Tribe is adamantly opposed to any plan that would result in the closure o the Loop Road.

4. That Area No. 2-85K, Blitzen River, is suitable for wilder

ness as recommended by the preferred alternative with the deletion of the road closure. The roads should be left open for designated livestock permittees and administrative use only.

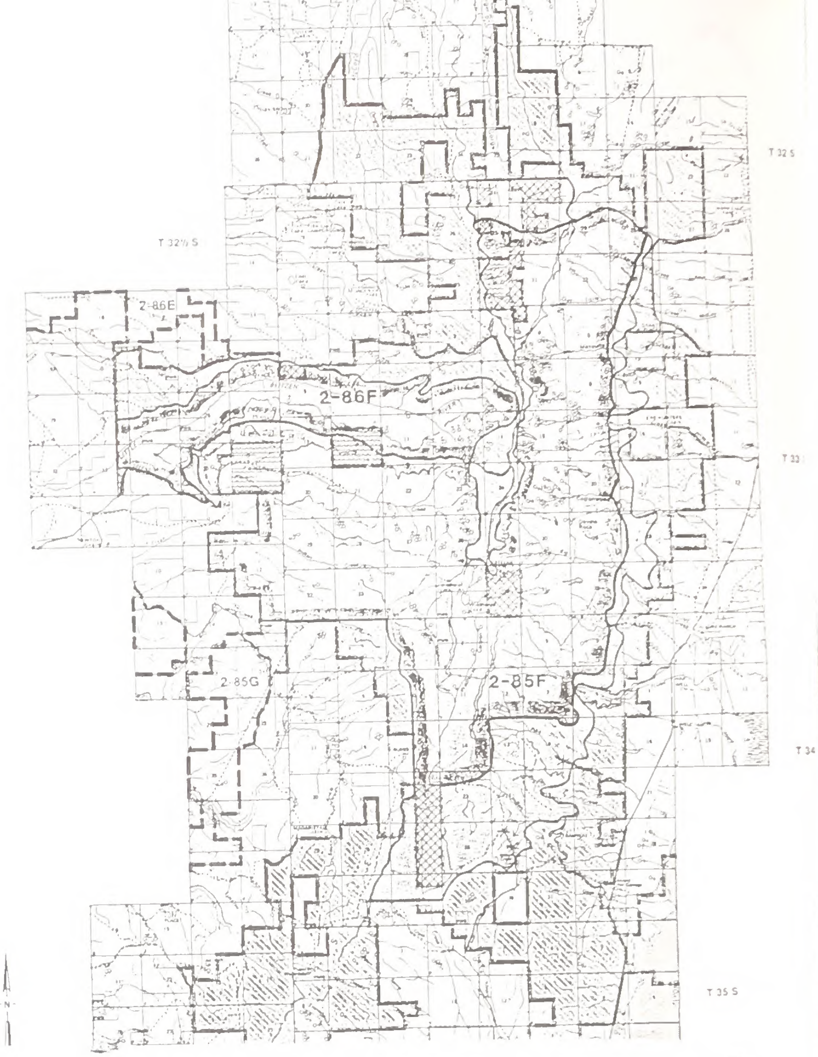
With Harney County having almost a million acres in the Wilder- Study Areas, it becomes very critical that the Bureau of Land gement expedite their recommendations to Congress, so that the erness Issue may be promptly resolved. The continued management million acres as if it is wilderness is having a significant de- ental effect on the economy of Harney County and the Tribe.

The Burns Paiute Tribe thanks you for this opportunity to comment requests that we be kept informed of the progress of this import- ssue.

Respectfully,

Charlotte Snapp

Charlotte Snapp,
General Manager
Burns Paiute Tribe



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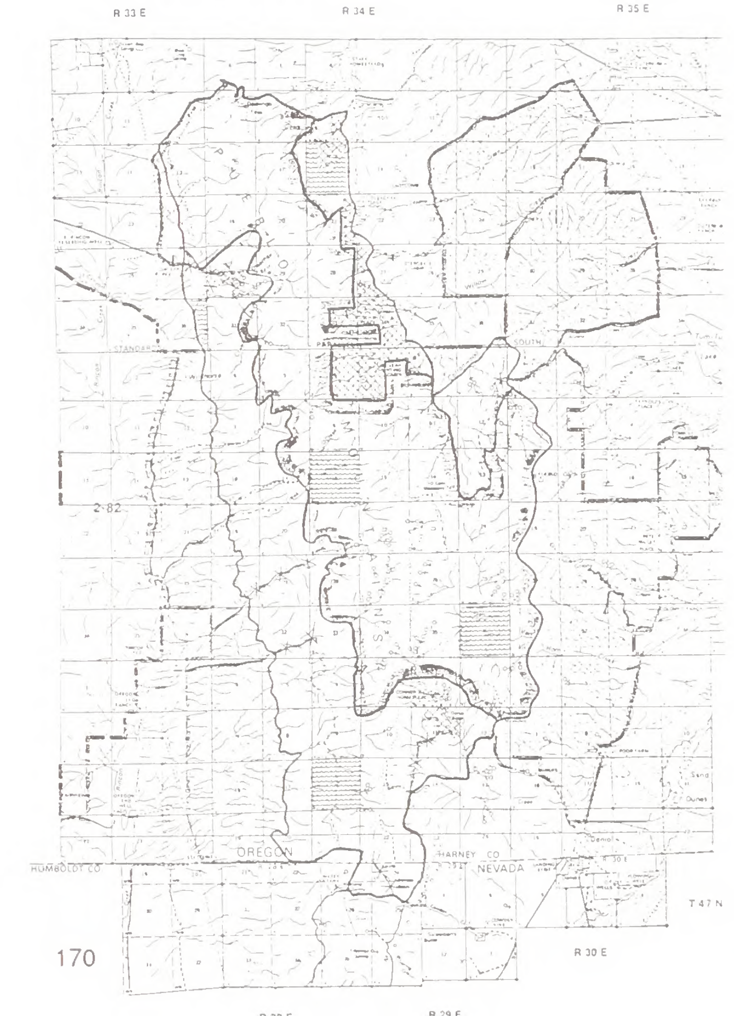
PUEBLO MOUNTAIN - WSA



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

2705 East Burnside Street, Suite 114, Portland, Oregon 97214 Telephone (503) 238-0667

August 29, 1985

Mr. William G. Leavell
State Director
Wilderness Studies (935)
Bureau of Land Management
PO Box 2965
Portland, OR 97208

Dear Mr. Leavell:

The accompanying remarks constitute the comments of the Columbia River Inter-Tribal Fish Comission (CRITFC) in response to the Oregon Wilderness DEIS. The CRITFC is composed of the fish and wildlife committees of the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes and Bands of the Yakima Indian Nation, and the Nez Perce Tribe.

787.1 Initially, we note BLM's recognition of tribally reserved hunting, fishing, and gathering rights and rights to graze livestock (see, for example, DEIS, Vol. III, page 434). Unfortunately, BLM's acknowledgement does not clearly indicate the extent of these rights. It is now beyond dispute that treaty Indian tribes may exercise reserved rights on ceded lands. The tribes' right to take fish that pass their usual and accustomed places is confirmed by numerous court decisions. See e.g. Sohappy v. Smith, 302 F. Supp. 899 (D. Or. 1969), aff'd, 529 F.2d 570 (9th Cir. 1976); Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n, 443 U.S. 658 (1979). Moreover, federal land managers cannot legally manage their lands in a manner that will hinder or frustrate the tribes' exercise of their treaty rights. See Passenger Fishing Vessel, 443 U.S. at 682; Confederated Tribes of the Umatilla Reservation v. Alexander, 440 F. Supp. 553, 555 (D. Or. 1977). See also Kittitas Reclamation District v. Sunnyside Valley Irrigation District, Nos. 80-3505, 81-3002, 81-3068, 81-3069 (9th Cir. June 14, 1985).

Commissioners

NEZ PERCE Allen Pinkham • Charles H. Hayes • Larry Mank • Herman Reuben
UMATILLA Roderick Cowapoo • N. Kathryn Brigham • Elzie Farrow • Robert Williams
WARM SPRINGS Harold Culpus • Delbert Frank, Sr. • Nathan Jim, Sr. • Claude H. Smith, Sr. • Eugene Greene, Sr.

For the most part, we are confining our remarks to BLM wilderness study areas that may be categorized as 1) being within lands ceded by our member tribes to the US Government during the treaty process; and/or 2) those lands directly or indirectly supporting populations of anadromous fish, which are species of special cultural and economic importance to the tribes. Our review, therefore, is primarily concerned with WSAs 2-103 (Aldrich Mountain), 5-1 (Thirtymile), 5-6 (Lower John Day), 5-8 (North Pole Ridge), 5-9 (Spring Basin), 5-21 (Badlands), 5-31 (North Fork), 5-33 (South Fork), 5-34 (Sand Hollow), 6-2 (Homestead), and 6-3 (Sheep Mountain). We will comment in detail upon some, but our comments should be viewed as typically applying to all. Further, by restricting ourselves to these areas we are not necessarily indicating concurrence with BLM's evaluation of and/or proposed action for other WSAs. Of those WSAs listed above, we note that 2-103, 5-9, 5-31, and 6-2 are recommended for No Wilderness/No Action alternatives. All others are proposed for some partial wilderness designation with residual lands declared nonsuitable.

Generally, it appears that, under BLM analysis, when lands within a WSA exhibit appreciable known or potential commodity values (e.g. minerals, timber, livestock forage), then the Bureau's inclination is to recommend those lands for non-wilderness so that commodity development can proceed. This occurs despite presence of high wilderness values (e.g. naturalness, opportunities for solitude, special features). For example, WSA 2-103 (Aldrich Mountain) is reported to have high wilderness values and to be readily manageable as such. Simultaneously, this area is considered to be a potential chromite and chrysotile asbestos source (both listed as strategic and critical minerals), although no deposits have actually been located there. Aldrich Mountain is also stated to contain 1,082 acres of commerical forest land that annually supplies 76 Mbf to Burns District's programmed timber harvest. And finally, the WSA is listed as supplying 231 AUMs of livestock forage, with potential to supply another 179 should various range improvements be accomplished.

These commodity values have apparently been compared to the less readily quantifiable (in terms of units of measure and dollar value) wilderness values (see for instance Table 5, page 441, DEIS Volume III) and, from that comparison, the rationale for selecting the preferred alternative arises: "The no wilderness/no action alternative is preferred for the Aldrich Mountain WSA because the benefits of retaining options for resource development outweigh the benefits of preserving wilderness values." (DEIS, Vol. III, page 345).

We are confused as to the method used to reach this conclusion. What "benefits" were assigned the wilderness and non-wilderness values? From what were they derived; how were they contrasted? Table 5 (DEIS, Vol. III, page 441) indicates that quantity, economic, and local personal income values derived from existing recreational uses of the Aldrich Mountain WSA are "unknown." If

this is the case, how then can they be compared with known values? For the BLM to conclude that benefits (values) from some uses outweighed benefits (values) from others, they must have assumed that the unknown values were less than the known. What is the assumption based upon? How was the comparison made? If the DEIS is going to display such conclusions then the method of derivation must also be clearly shown.

The environmental consequences of adopting the preferred alternative for this WSA are, at best, superficially discussed. BLM seems far more concerned with their ability to proceed with existing activities and a few accompanying range improvement projects (all of which will primarily benefit an entrenched use) than with the overall long term effects of various management scenarios. If the no wilderness alternative is adopted for Aldrich Mountain, with subsequent effects on the wildlife populations (fish aren't even mentioned), what does BLM plan to do to offset negative effects? There will certainly be some, as indicated on page 79 (DEIS, Vol. I) where it is stated that "Without wilderness designation, however, adverse impacts could occur as a result of mining, vegetative manipulation, intensive grazing development, timber harvest, and other resource development activities". It is insufficient for the DEIS to simply state, for example, that "Species dependent upon old growth timber, such as the pileated woodpecker, would be displaced when harvest occurs in the old growth forest" (DEIS, Vol. III, page 442). How many pileated woodpeckers will be displaced? What does that mean in terms of effects on the entire pileated woodpecker population in the John Day Planning Area or the Burns District? In other words, has the BLM assessed activities likely to occur under the preferred alternative in terms of their overall impacts on wildlife (and other) species occupying BLM lands? No such analysis is apparent in the DEIS, and therefore its assessment of environmental consequences is deficient.

The BLM's description of expected effects upon economic value and local income (Tables 6-7, DEIS, Vol. III, pages 443-4) is equally superficial. Nobody questions, for instance, that application of wilderness or no wilderness management will differently affect timber harvest activities on the WSA. But, if timber harvest is precluded in 2-103, what would that really mean? The DEIS indicates there would be "losses" of 76 Mbf of programmed harvest, $8,835 of annual economic value, and $18,240 in local personal income. But no analysis accompanies these "results" to put them into any kind of meaningful perspective. Simultaneously, in Volume 1 of the DEIS we find the statements: "Commercial timber production would not be significantly affected over the short or long term by any of the alternatives" (page 83) together with "The probability of any of the alternatives having a substantial effect on the economic future of the region is low" and "These potential direct economic effects are so minor, in relation to the existing economic conditions, that no significant, indirect social impacts are anticipated under any of the alternatives as a result of economic change" (page 89).

787.4 (cont.) (Given these statements, one might questin the utility of commodity development in the first place!) As a result, it is difficult or impossible to adequately assess actual benefits or detriments inherent in various management alternatives. Insufficient information is supplied to permit this, and what is offered is often contradictory.

787.5 In its description and analysis of WSAs 5-1 and 5-6 (Thirty mile and Lower John Day) the statement is made that: "The John Day River provides aquatic habitat for steelhead trout and chinook salmon (some of Oregon's last remaining native salmonid runs)" (DEIS, Vo. II, page 194). Further on (page 195), it is stated: "River riparian habitat within the Thirty mile WSA totals 91 acres on 8.5 miles of river, and 142 acres on 29 miles within the Lower John Day WSA. Present habitat condition is poor". Later, while discussing environmental consequences of various management alternatives (page 199) BLM doesn't even mention the fish. There is an oblique reference within its discussion of 2.2 miles of riparian fence and whether or not it would be appropriate in a wilderness area. This is immediately followed by a statement that the fence would be constructed under the no wilderness alternative and that this would result in increased fish numbers.

The question arises: If the preferred alternative is instituted, what is BLM's plan for managing the riparian habitat to prevent further degradation of anadromous fish that depend on it? Assuming that the riparian fence cannot be built, what changes are anticipated in grazing management schemes (grazing is indicated as the cause of degraded riparian areas) to prevent additional damage?

787.6 Similarly, when elaborating on "economic value and local income" (DEIS, Vol. 1, page 58), complex, multifaceted interrelationships are sloughed off in generality and innuendo. Following a brief description of economic conditions in areas containing the WSAs the DEIS states: "The basic industries in these areas are agriculture and forest production. The depressed condition of the forest industry accounts for a large part of the high unemployment in these areas". Both statements are probably accurate, but to imply a connection between designating land as wilderness, which removes timber from a harvest base, and increased unemployment is both misleading and inaccurate. Current problems in the forest products industry stem largely from depressed markets rather than from inadequate supply. The national forests presently contain large volumes of sold but unharvested timber because present market conditions have rendered it uneconomical to cut.

The very next paragraph in the DEIS lists resource outputs of concerns as "livestock grazing", "recreation", "wood products", "fish", and "mineral production". It is these outputs, the document states, that will be viewed as primary measures of economic conditions. Yet later in that section (page 61) the only values offered are for grazing, timber sales, and mineral leases -- those that yield direct revenues to the federal

787.6 (cont) treasury (via BLM). The implication is that other resource outputs (e.g. recreation, fishing) generate no revenues. This is patently erroneous.

Our detailed comments end here. In closing, we would be remiss in not complementing the Bureau on its obvious, in-depth knowledge of the lands under its jurisdiction and the resources they contain. The descriptions of land forms, indigenous ecosystems, and various special features in the WSAs made the DEIS an highly informative and interesting document to review.

We hope our comments, meant to highlight problems we encountered in attempting to reconcile the rationales of BLM's proposed actions in regard to these lands, are viewed by you in the same constructive manner in which we offer them. Should confusion arise, however, please contact either Alex Heindl (biologist) or Jim Weber (policy assistant) of our staff for assistance.

Sincerely,

S. Timothy Wapato

S. Timothy Wapato
Executive Director

ALH:JW:vm

Responses To Letters From Indian Tribes

Response 634.1: See Response 173.1 under Letters From Local Government Agencies.

Response 634.2: See Response 173.2.

Response 634.3: See Response 1335.1 under Letters From State Agencies.

Response 634.4: This information was considered in the development of the FEIS proposed actions and impact analyses for the pertinent WSAs. See also Response 173.4 under Responses To Letters From State Agencies.

Response 787.1: The FEIS acknowledges these tribally reserved rights, the extent of which is being established, as your letter points out, through numerous court decisions. Legally reserved rights would be provided for under wilderness designation.

Response 787.2: Section 5 in each appendix contains a general rationale for selection of the proposed action, primarily for reader information. However, more detailed rationale and discussion of wilderness suitability criteria will be documented in the Wilderness Study Report (WSR) for each area studied. The WSR, which represents the decision document for this wilderness study effort, will be completed following release of this FEIS and receipt of the U.S. Geological Survey/Bureau of Mines mineral reports required by Congress.

You may note that estimated recreation use is now given an economic factor in terms of local personal income per recreation visitor day. However, the rationale for any given proposal is not solely based on economics.

Response 787.3: The FEIS now includes scenarios of likely development under the various alternatives and focuses impact analyses more directly on those scenarios. The Aldrich Mountain appendix now specifically states that there is no fishery in the WSA. With respect to old-growth dependent species, the analysis uses the term “displacement” to indicate that the individuals would move to nearby suitable habitat in the wake of projected timber harvest.

Response 787.4: It should be noted that economic value is no longer treated as an issue in the EIS for reasons given in Addendum 1, Local Personal Income Related to Resource Outputs. The analysis of economic impacts in the appendices is intended to provide a site-specific perspective measured in terms of dollars of local personal income gained or lost on the basis of current and projected resource uses. The Statewide Volume provides the statewide perspective of impacts relative to such topics as total timber harvest levels or total local personal income. Although most impacts on commodity development issues are relatively insignificant in relation to total figures for the State of Oregon, the FEIS does state that this statewide perspective is not meant to imply that direct economic gains or losses to specific individuals would be insignificant.

Response 787.5: The FEIS has been strengthened to show predicted construction of riparian fencing as occurring in the Thirtymile and Lower John Day WSAs under every alternative and better describes the impacts of that fencing (including improved riparian habitat for wildlife and fish). In the EIS, existing conditions (e.g., poor habitat conditions) are the baseline from which impacts of the proposed action and alternatives are analyzed, rather than an impact in and of themselves. Only the anticipated change in those conditions are described.

Response 787.6: The EIS no longer makes the statements that, together, apparently implied that wilderness designation would increase unemployment as a result of timber harvest restrictions. The EIS does project approximately 50 years out, however, and wilderness restrictions on projected timber harvest are shown to reduce local personal income from the WSAs with available commercial forest lands. Further, the net effects on local personal income from all resource outputs of the WSAs may not be a reduction, as is shown under most of the statewide alternatives.

The economic analysis in the FEIS now focuses on changes in local personal income associated with projected recreation, livestock grazing and timber harvest. Projected mineral production has not been quantified for reasons given in Addendum 1. A local personal income factor for recreation, which includes fishing, is now utilized in the EIS in terms of dollars per recreation visitor day.

Responses to Substantive Statewide Comments

Following are summaries of substantive EIS adequacy and accuracy comments received in letters and as oral testimony during the comment periods on both the Draft EIS and Supplement. In addition, several comments dealing with issues beyond the scope of this EIS are summarized, with responses intended to clarify the policies or processes followed in the wilderness study and EIS efforts. Comments dealing with specific WSAs are summarized in the pertinent site-specific appendices.

The comment summaries and responses are grouped by resource topic followed by comments addressing other issues relative to the analysis, alternatives and the EIS in general.

1. Wilderness Values

Comment 1.1: The EIS fails to consider other values of wilderness besides recreation. Wilderness values of fish and wildlife, botanical resources, archeological features, special features, and scientific and educational values were not adequately considered in the analysis. **Response**: Chapter 3 in this EIS describes the wilderness values of the WSAs in terms of the Congressional definition included in the Wilderness Act of 1964. Naturalness, opportunities for solitude and primitive recreation, and special wilderness features, including those listed in the above comment, are summarized for the WSAs, and impacts on these values are analyzed in Chapter 4. Impacts more specific to individual special wilderness features, such as wildlife, botanical resources and archeological features, are addressed under those specific resource headings in Chapter 4.

2. Energy and Mineral Development

Comment 2.1: The EIS incorrectly bases impacts on mineral potential rather than the probability of mineral development. **Response**: This final EIS now includes projections of mineral development based on potential for mineral occurrence and other factors conducive to development. Impacts of the alternatives on projected development, and impacts of such development on other resources, are now analyzed in the EIS.

Comment 2.2: The analysis fails to consider mineral potential and mineral availability outside of the WSAs. **Response**: The Geologic Resource Areas (GRA) covered by the Geology-Energy-Mineral inventories of the WSAs often included lands beyond the WSA boundaries, although a detailed survey of all public lands in Oregon was not conducted nor considered necessary for analysis of impacts within the WSAs. Mineral development projections in this final EIS utilized available information on mineral potential and availability outside the WSAs to help predict whether development is likely within the WSAs.

Comment 2.3: Only development of proven claims will affect wilderness areas. **Response**: This EIS acknowledges that only valid (proven) existing claims could be developed under the wilderness management policy. Such development could impair wilderness values provided that there is no unnecessary and undue degradation of resources (i.e., no surface disturbance greater than would normally result from usua!, customary and proficient operations).

Mineral development projections reflect this potential for development within a designated wilderness area in several of the appendices. However, all WSAs possess wilderness values, and the EIS describes impacts to these values regardless of whether these areas are designated as wilderness or not designated under a particular alternative.

Comment 2.4: The EIS should not consider Areas of Critical Mineral Potential (ACMPs) as indicators of mineral value or significance, since they are nominated by the mineral industry without review or proof of occurrence. **Response**: In the wilderness study program, ACMP nominations are part of the minerals data used along with other minerals data to determine the mineral potential of the affected area. The information contained in an ACMP nomination may present new data on minerals. The nominations are also part of the public input which informs BLM about the objective data and subjective views people have on wilderness study areas. The U.S. Geological Survey and the Bureau of Mines compile all minerals information, including ACMP nominations, as part of their mineral surveys of preliminary suitable WSAs.

ACMPs are not formal land classifications nor do nominations alter the wilderness study process or automatically affect an area's wilderness suitability. Nominations are screened to ensure that the area is not excluded from consideration as an ACMP and that the data or interpretations included in the nomination were not previously evaluated in BLM's decision to restrict access to minerals in the area through withdrawal or other land use restriction. Nominations can be made by anyone in accordance with the procedures described in the Federal Register (Vol. 47, No. 233, December 3, 1982).

Comment 2.5: The mineral potential for occurrence ratings in the EIS that are based on mineral reports prepared by the Oregon Department of Geology and Mineral Industries (DOGAMI) are inflated and inaccurate. Reports prepared by the U.S. Geological Survey (USGS) differ from those of DOGAMI. The DOGAMI reports should be reviewed by independent professionals. Since USGS/Bureau of Mines surveys will only occur on WSAs that are recommended suitable, accurate mineral analysis leading to suitability recommendations is crucial. **Response**: DOGAMI reports were reviewed by BLM geologists and used, along with other information sources, in developing the ratings shown in the EIS. As new information has become available, the geologists have used it to revise their ratings. In this way, BLM geologists have used the information in DOGAMI and USGS/Bureau of Mines reports, rather than the ratings themselves, due to variations in the rating systems.

Comment 2.6: Development of oil and gas or strategic and critical minerals is probably being postponed by wilderness designation and should not be characterized in the EIS as lost. **Response**: The EIS recognizes that wilderness designation is neither an irreversible nor irretrievable commitment of resources. However, the EIS assumes, for analysis purposes, that wilderness designation would continue into perpetuity under current wilderness management guidelines. Under this assumption, opportunities to develop minerals in wilderness areas where no claims or leases with valid existing rights exist would be considered as foregone.

Comment 2.7: The EIS fails to state which segment of the public nominates ACMPs. **Response**: The opportunity to nominate ACMPs is open to all segments of the public, although most areas have been nominated by representatives of mineral industry. See the response to comment 2.4 regarding establishment of ACMPs and how they are used in the wilderness study process.

Comment 2.8: The EIS should project the rate of oil and gas lease terminations. **Response**: There are various reasons for terminating or cancelling oil and gas leases, ranging from those related to oil and gas potential to those involving investment in WSAs with a future possibility of being closed to mineral development through wilderness designation. Projecting the rate of lease terminations without knowing the actual reasons for them would not be meaningful to the EIS analysis. The EIS now focuses on development projections that consider a variety of physical and economic factors, including industry interest.

Comment 2.9: Mineral resource quality, quantity and accessibility are not addressed in the EIS. The EIS does not differentiate between geothermal direct use and electrical generation. **Response**: The energy and mineral development projections analyzed in this final EIS now consider all of these factors in predicting the likelihood of development within a WSA. The projections for geothermal resources now differentiate between direct use and electrical generation.

3. Wildlife and Vegetation

Comment 3.1: BLM did not conduct extensive inventories for threatened and endangered (T&E) species and did not adequately address rare/sensitive plants in the EIS. **Response**: There would be little difference among the alternatives relative to impacts on T&E species. Protection is afforded these species under the Endangered Species Act and other regulations and policies regardless of wilderness designation. As such, the time and expense associated with detailed T&E plant surveys of the 2.6 million acres of WSAs was not warranted. The FEIS does address impacts to known or suspected T&E/sensitive plant species from projected activities under the Wilderness Special Features and Vegetation discussions in Chapter 4 of the Statewide Volume and Section 4 of each appendix. Additionally, environmental analysis of any actual project proposed in a WSA would include a field survey of the project site for T&E/sensitive species.

Comment 3.2: The EIS needs to specify quality and quantity of vegetation and use accurate terminology (e.g., early and mid-seral are euphemisms for "overgrazed"). Impacts on range condition are not adequately addressed. **Response**: The site-specific appendices in the FEIS now describe the ecological status (see glossary) of vegetation in each area as a standardized, objective indication of where each plant community falls successionally relative to the area's potential natural community (see glossary). The system avoids potential misinterpretation of condition classes, which can vary by resource perspective (i.e., livestock grazing or range condition versus wildlife forage or habitat condition vs. natural condition). Grazing is only one of a variety of factors (such as fire, insect infestation and disease) that can result in vegetation being in early or mid-seral stage.

General, qualitative descriptions of vegetation are presented in the Introduction section of each appendix, under General Description of the Study Area, and in the Wilderness Values and Vegetation sections of the Affected Environment. With the inclusion of development scenarios in the FEIS, impacts of projected actions on vegetation are now described in greater detail.

Comment 3.3: The economic analysis failed to consider the economic value of wildlife to the local economy. **Response:** Economic value is no longer treated as an issue in the EIS for reasons given in Addendum 1, Local Personal Income Related to Resource Outputs. A dollar value of local personal income has been applied to a recreation visitor day, which includes wildlife-related recreation activities, such as birdwatching, general wildlife viewing and hunting.

Comment 3.4: The benefits of crested wheatgrass seedings (and other vegetative manipulation) to wildlife are overstated. The EIS takes wildlife credit for projects designed for cattle grazing. **Response:** Descriptions of impacts on wildlife from projected vegetation manipulation for livestock or wildlife now identify habitat gains and losses pertinent to the various species in the area.

Comment 3.5: Most or all of the series of wildlife reports by Thomas, et al. is relevant to this EIS and should be used and referenced. **Response:** The two reports of primary relevance to this EIS, one addressing managed rangelands and the other addressing managed forests, were used and cited in the References section of this EIS.

Comment 3.6: Wildlife projects would not be needed if the range and riparian zones were in good condition. BLM should consider non-structural techniques as alternatives to structural projects, and the EIS should not characterize foregone wildlife projects as harming wildlife. **Response:** It is true that many of the proposed wildlife projects are designed to restore habitat for various species. For EIS purposes, existing conditions (e.g., poor habitat conditions) are the baseline from which impacts of alternatives are analyzed, rather than an impact in and of themselves. Only the anticipated changes in those conditions are described as impacts of the alternatives.

Both structural and non-structural techniques were considered in developing projections of wildlife habitat improvement proposals under each alternative. Foregone wildlife projects are characterized in the FEIS as a continuation of the existing habitat conditions and trends or as a foregone opportunity to improve them.

Comment 3.7: The EIS did not indicate that salvage logging harrasses wildlife. **Response:** The FEIS notes in pertinent appendices that any timber removal causes at least short-term displacement of wildlife. Logging activities are scheduled to avoid disturbance in the vicinity of known raptor nest sites.

Comment 3.8: The EIS should not characterize unallocated forage as "lost." The forage is available to wildlife. **Response:** Existing decisions allocate these AUMs to livestock use in the existing land use plans that this wilderness study serves to amend only for consideration of wilderness values. The pertinent FEIS appendices characterize the impact of not allocating this existing forage as a foregone increase in livestock grazing use rather than a loss of AUMs. The availability of that portion of this forage that is suitable for wildlife use is addressed in the wildlife sections.

Comment 3.9: The EIS does not adequately analyze the effects of livestock grazing on native vegetation, wildlife and raptors. There is no support for the conclusion of no impact on threatened and endangered species. **Response:** The FEIS describes impacts of changes in livestock grazing use levels and of proposed projects on native vegetation and wildlife, including raptors, where such actions would affect those resource values. See the response to comment 3.1 regarding impacts on T&E species. The FEIS does address potential threats to known or suspected T&E/sensitive species from actions projected to occur in the vicinity of these species or their habitat.

Comment 3.10: The EIS fails to assess impacts on ecological communities and diversity. The WSA boundaries divide ecological communities. **Response:** The EIS describes general plant communities in the WSAs and analyzes impacts to special or sensitive communities (such as riparian vegetation, unusual plant associations and native, ungrazed vegetation) in addition to analyzing impacts to vegetation in general in terms of acres of vegetation alteration or removal and revegetation. Impacts on vegetative diversity are analyzed in terms of representation of ecosystems in the National Wilderness Preservation System (NWPS). That analysis utilizes the Bailey-Kuchler ecosystem classification system as an indicator of diversity on a national scale. This EIS also utilizes Oregon Natural Heritage Plan communities as a finer level of detail than the national system.

Within the bounds of Wilderness Act criteria, the integrity of the NWPS, and land ownership and transportation patterns, some enhanced wilderness alternatives in site-specific appendices expand wilderness recommendations beyond the WSA boundaries to better incorporate entire ecological communities.

Comment 3.11: The potential for occurrence of T&E species should have been analyzed as was done for minerals in the EIS. **Response:** The EIS does identify suspected occurrence of T&E species in pertinent appendices. See also the response to comment 3.1.

Comment 3.12: The EIS needs to better analyze impacts of livestock grazing levels on wildlife. The Oregon Department of Fish and Wildlife (ODFW) bases its management objectives for game populations on available habitat, while BLM allocates AUMs for wildlife based on ODFW's objectives. This is a "catch 22" situation. The EIS should also address wildlife impacts from livestock grazing increases on adjacent lands. **Response:** Impacts on wildlife of existing grazing levels and of proposed grazing increases outside the WSAs were already analyzed in the grazing EISs associated with the existing land use plans.

Since they were based on available habitat, ODFW management objectives represent an established baseline from which impacts on wildlife from wilderness designation and from projected activities in the absence of wilderness designation can be measured. It is beyond the scope of this Wilderness EIS to consider changes in habitat management objectives that were established in the existing plans.

Comment 3.13: The EIS should discuss impacts of fencing for resource protection on wildlife, since fences may restrict certain animals. **Response:** BLM fencing standards provide for special wildlife movement and migration requirements. Therefore, such impacts on wildlife were not considered to be significant.

Comment 3.14: The EIS fails to analyze impacts on wildlife from restricted predator control/trapping. **Response:** The Wilderness Management Policy allows for some predator control, with State Director approval, utilizing methods which can be directed at eliminating individual problem animals while presenting the least possible hazard to other animals or to wilderness visitors. For wildlife management, the emphasis in wilderness areas would be on natural systems, with the goal of allowing predator-prey relationships to achieve balance. As such, potential impacts to wildlife from reduced predator control were not considered to be significant.

Comment 3.15: The EIS was based on an inadequate inventory of insects (such as butterflies and moths), aquatic communities (including cells identified in the Oregon Natural Heritage Plan), small mammals and critical fish and wildlife habitat. **Response:** All wildlife inventories conducted in association with this EIS or previous land use planning efforts were considered adequate for analysis purposes in this EIS with respect to the level of actions and impacts expected. Extensive inventories of non-sensitive insects and small mammals were not warranted in relation to their estimated numbers and potential to be significantly affected by actions projected in this EIS. Wildlife sections of the site-specific appendices do address sensitive species, including threatened and endangered species, as well as aquatic communities and designated critical habitats of fish and wildlife. Critical habitats have been designated by the U.S. Fish and Wildlife Service and are defined as habitats necessary for the survival and recovery of Federally listed species. All such designated habitats within the WSAs are addressed in this EIS.

Comment 3.16: A table of ONHP vegetative communities similar to the Bailey-Kuchler table should appear in the EIS. The communities should also appear on a map. **Response:** A table showing existing and potential wilderness representing ONHP communities found in Oregon WSAs could not be developed, since other agencies in and around Oregon have not inventoried their existing and potential wilderness areas for ONHP vegetation communities. In addition, sufficient data were not available to uniformly map the vegetative communities and calculate the acreages represented in all of the study areas.

Comment 3.17: The EIS lacks scientific reference data with respect to wildlife. Studies should be included in the appendix. **Response:** The References section at the end of the Statewide Volume lists scientific studies and other references utilized by BLM specialists in developing management proposals under each alternative, describing the affected environment and estimating the potential effects of the alternatives on wildlife habitat and populations. Referencing, rather than including, the studies in the EIS meets the paperwork reduction provisions of the Council on Environmental Quality (CEQ) regulations that discourage preparation of encyclopedic EISs.

Comment 3.18: The EIS lacks data on wildlife habitat carrying capacity, the allocation of forage for wildlife, and habitat condition trends. **Response:** The original land use plans, or Management Framework Plans, which this EIS serves to amend for consideration of wilderness values, considered wildlife habitat and forage needs and trends in developing final land use allocations. This Wilderness EIS supplements the previous analyses by comparing effects of existing decisions with those of potential wilderness designation. As such, reiteration of wildlife habitat and forage needs and trends considered in existing plans is unnecessary for this analysis. Identification of ODFW wildlife management goals was considered sufficient for this analysis.

4. Watershed and Water Quality

Comment 4.1: BLM failed to analyze the benefits to water quality from maintenance and restoration of watersheds that would occur under wilderness management. **Response:** The FEIS now addresses watershed as an issue topic. The analysis of impacts on watershed under the All Wilderness alternative identifies water quality improvement on approximately one-third of the perennial streams in the WSAs, with the other two-thirds remaining in their current condition. Details of this analysis are described in the site-specific appendices.

Comment 4.2: The EIS failed to analyze the adverse impacts of cattle on streams and riparian zones and of mining, use of ORVs and construction of utility corridors on streams. **Response:** The site-specific appendices analyze impacts on streams and riparian zones, from all activities projected under each alternative, in the Watershed and Vegetation discussions of the Environmental Consequences sections.

Comment 4.3: The EIS does not identify adverse impacts caused by not being allowed to manage or improve watershed under wilderness management. It is patently false to say that wilderness improves water quality. Water quality would decline under all alternatives except the No Wilderness alternative. **Response:** The Wilderness Management Policy guidelines were used in predicting, for analysis purposes, whether watershed improvement projects in individual WSAs would be allowed under wilderness designation. As described in pertinent appendices, some projects would likely be allowed and some would not. Based on predicted effects of the allowed projects and on other effects of designation, the statewide analysis of the All Wilderness alternative concludes that water quality on approximately one-third of the perennial streams in the WSAs would improve, while the other two-thirds would remain at current conditions, some of which are poor.

Comment 4.4: Wilderness policy would restrict riparian protection, thus allowing damage to be caused by cattle. This appears to be a “catch 22.” **Response:** Wilderness management policy allows for riparian projects designed to protect or improve overall wilderness resources. The EIS projects that most riparian protection projects would be allowed under wilderness management where damage from livestock use has occurred.

5. Livestock Grazing

Comment 5.1: The EIS needs to clarify what is meant by AUMs licensed, utilized, and available but unallocated. **Response:** The livestock sections of this EIS have been revised in an attempt to be more understandable. The term, “licensed,” was used to describe those AUMs officially authorized for livestock use in an allotment; while “utilized” referred to the estimated amount of forage actually consumed by livestock. The FEIS focuses primarily on the amount of use in each WSA estimated from the portions of allotments within WSAs. As described in Chapter 2 of the Statewide Volume, available but unallocated forage refers to forage that is currently produced in some WSAs, primarily due to past projects, but has not been allocated to livestock or for any other purpose pending the outcome of this wilderness study.

Comment 5.2: The EIS should assess AUMs on public land in comparison to the entire State of Oregon and the entire nation. **Response:** The EIS does identify the total AUMs licensed for livestock use on BLM lands statewide in comparison to those in the WSAs. However, a comparison with total livestock grazing in the State of Oregon or nation as a whole is not relevant to the analysis of impacts on livestock use in the WSAs. Such statewide or nationwide comparisons with any of the WSAs' resource values would render those values insignificant.

Comment 5.3: Explain the demand for additional forage from proposed projects when available AUMs are not being used, and determine the demand for additional forage if fair market value was charged instead of the “subsidized” value of $1.35 per AUM. **Response:** As explained in the EIS, the available forage identified in many WSAs is not currently being utilized because it had not been allocated to livestock use prior to constraints being placed on such allocations in areas under consideration for wilderness. Implementation of the existing plans which propose to allocate this available forage to livestock use is pending the outcome of this wilderness study and other environmental analyses.

Determining the demand for additional forage based on fair market value rather than the established grazing fee would be irrelevant to this analysis, which analyzes effects of various alternatives of wilderness designation on existing land uses or land use proposals. It is beyond the scope of this EIS to predict whether Congress may revise the grazing fee formula or eliminate it altogether.

Comment 5.4: The EIS fails to describe impacts of grazing on watershed, riparian zones and fish. The impacts of increased grazing should be described. There is no analysis of grazing impacts on threatened or endangered (T&E) species, big game and nongame species. **Response:** The impacts of all actions, including livestock projects and grazing increases projected to occur under each alternative, are described for watershed, riparian zones, fish, T&E species and big game and nongame species under the Watershed, Vegetation and Wildlife discussions in Chapter 4 and under similar sections in the site-specific appendices. The impacts of existing grazing levels were already analyzed in the grazing EISs associated with existing land use plans.

Comment 5.5: Acreages affected by projected range improvements should be shown. **Response:** Table 4-5 lists the acreages both directly affected (from surface disturbance and vegetative manipulation) and indirectly affected (visually influenced) by range improvements projected under each alternative. Table 4-8 displays acreages affected by range improvements in terms of vegetative alteration and vegetation removal.

Comment 5.6: The EIS should acknowledge that revegetation programs are a result of overgrazing. **Response:** The EIS acknowledges that a number of projected fence projects are designed to remove cattle from sensitive riparian areas to allow for recovery. In a few WSAs where precluded projects are shown to result in grazing use reductions, those projects are identified as being designed to increase forage levels to offset a shortage in available forage. Most project proposals, however, are designed to increase forage for increased livestock grazing use.

Comment 5.7: The analysis tends to ignore the fact that existing grazing can continue in wilderness and, therefore, there is no impact on grazing (or related economics) from wilderness designation. The EIS tries to portray precluded grazing increases as a negative impact. **Response:** The EIS acknowledges that livestock grazing can continue within wilderness areas at existing levels of use and, thus, focuses the impact analysis on the effects of wilderness designation on proposed projects and proposed livestock grazing increases. Precluded grazing increases are characterized as foregone opportunities rather than reduced grazing. The EIS specifically does not place value judgements on impacts by characterizing them as either positive or negative.

Comment 5.8: The EIS analyzes impacts of wilderness designation on livestock operations at length, but not the impacts of grazing on the public's land. Grazing is a privilege; not a right. Abusive grazing should be stopped rather than used as an excuse not to designate wilderness. Projects such as riparian fences and seedings are indications of grazing abuses and should be analyzed as such. **Response:** The FEIS analyzes impacts of changes in livestock grazing use levels and of proposed livestock projects in the WSAs. The impacts of existing grazing levels were already analyzed in the grazing EISs associated with existing land use plans. See the response to Comment 5.6 regarding projects that indicate overgrazing or "abuse" of public lands.

6. Utility Corridors

Comment 6.1: The EIS over-emphasizes utility corridor potential. The proposed routes represent an industry "wish list." **Response:** The EIS acknowledges, under the Affected Environment, that future needs for the electric transmission corridors are speculative and depend on a number of major variables. However, as with all other potential resource uses analyzed in this EIS, the likelihood of development within the foreseeable future was assessed and scenarios of potential development of two corridors were ultimately developed for analysis purposes in this EIS.

Comment 6.2: The effects of facility construction within the utility corridors on wilderness values needs to be described in the EIS. **Response:** Table 4-5 in the FEIS shows the acres of estimated surface disturbance (direct impacts) and visual influence (indirect impacts) on wilderness values caused by projected development of transmission lines within the corridors. Further details are provided in the site-specific appendices for the four WSAs crossed by the proposed routes.

Comment 6.3: The costs estimated in the EIS for rerouting the transmission lines around wilderness areas should be presented in relation to the total cost of construction, maintenance and line load energy loss for the entire length of the transmission line. **Response:** Consideration of a number of variables, including potential electrical energy sources and destinations and opportunities to tie into other existing or planned lines, led to the general alignments of the north-south and east-west corridors through eastern Oregon that are identified for analysis purposes in this EIS. Actual beginning and ending points were not established. Thus, overall costs of construction, maintenance and line load energy loss cannot be determined. Such data would also be irrelevant to this analysis, which describes the specific effects of wilderness designation of the Oregon WSAs on resource values and potential uses and the effects of those potential resource uses on wilderness and other values.

Comment 6.4: The EIS fails to provide demand data and information regarding profits to the utility companies from construction of transmission lines within the corridors. **Response:** The EIS references the Western Regional Corridor Study as the primary source of data leading to the two corridors addressed in this EIS. Other sources referenced, that provide information regarding demand, are the Northwest Power Planning Council's *Northwest Conservation and Electric Power Plan, 1986,* and the U.S. Department of Energy's *Energy Projections to the Year 2010, 1983*. Profit data are not relevant to the analysis in this EIS.

7. Cultural and Paleontological Resources

Comment 7.1: The EIS should better describe specific impacts on cultural resources under alternative 7. It should also acknowledge that wilderness designation, by prohibiting vehicles, range developments and other surface disturbing actions, would protect cultural sites. **Response:** The FEIS now projects specific actions that are likely to occur under each alternative and indicates whether these projected actions could threaten cultural or paleontological resources. The comparison of impacts table (Table 2-4) does present a greater number of potentially threatened sites under those alternatives with fewer acres designated as wilderness. The EIS also acknowledges that the legal protection already afforded cultural resources would continue regardless of wilderness designation or nondesignation, and potential impacts could be reduced or eliminated through required mitigation.

Comment 7.2: Since cultural sites have not been adequately inventoried, the EIS cannot adequately analyze potential impacts on them. **Response:** There would be no significant difference among the alternatives relative to impacts on cultural sites due to the protection already afforded them under the Antiquities Act and other laws and regulations regardless of wilderness designation. As such, the time and expense associated with detailed cultural inventories of the 2.6 million acres of WSAs was not warranted. The FEIS does address impacts to known cultural sites from projected activities. Additionally, environmental analysis of any actual project proposals in the study areas would include a cultural resource inventory of the project sites.

8. Recreation Use

Comment 8.1: Recreation is not assigned any value except for hunting and fishing. **Response:** The EIS covers the entire range of primary recreation activities observed in the WSAs without placing any weighting on any one type of activity. The local personal income analysis now utilizes an average dollar value for a recreation visitor day regardless of the particular recreation activity engaged in.

Comment 8.2: The EIS underestimates recreation use after designation of an area as wilderness. Forest Service studies show increases in use, yet the EIS documents neither an increase nor a decrease. **Response:** The FEIS now presents best professional estimates of recreation use levels expected to occur in each WSA under each of the alternatives. WSA-specific estimates are shown in the appendices, while Table 4-14 in Volume 1 documents expected net increases and decreases across all of the WSAs. For reasons given in the site-specific appendices, estimated use increases are predicted for some WSAs and reductions are predicted for others under wilderness designation. These estimates are based on expected changes in recreation use in areas that are more arid and more remote from population centers than most existing wilderness areas, and in areas where existing recreation uses are primarily vehicle-dependent.

Comment 8.3: The EIS should provide recreation use estimates and relate these estimates to population growth. **Response:** The FEIS includes estimates of existing recreation use levels in the WSAs. These estimates and the projected changes in recreation use under the various alternatives took population change estimates into account.

Comment 8.4: Hunting is inaccurately characterized in the EIS as a vehicle-oriented activity, similar to ORV use. It may be vehicle accessed, but it otherwise is a primitive recreation activity. **Response:** The EIS now uses the term "vehicle-dependent" in reference to recreation activities such as hunting that rely on vehicles for access.

Comment 8.5: Use of the Desert Trail would be enhanced by wilderness designation. **Response:** The Desert Trail is addressed in those appendices for WSAs that the trail traverses. It is addressed both as a primitive recreational opportunity under Wilderness Values and as a recreational feature under Recreation Use. Anticipated impacts to the trail under each alternative are analyzed in the site-specific appendices.

Comment 8.6: The EIS ignores spiritual and mental health values and their relationship to wilderness use. People seek primitive recreational experiences for these important spiritual and mental health values. **Response:** Spiritual and mental health values are considered to be a part of primitive recreational values and opportunities for solitude. The EIS analyzes impacts on primitive recreational values and solitude opportunities in detail.

Comment 8.7: The opportunity cost of wilderness recreation foregone under alternatives 2 through 7 should be displayed. **Response:** The EIS defines impacts in terms of changes relative to the existing situation. The term, impact, is defined as the effect, influence, alteration or imprint of an activity. Impacts are therefore not attributed to actions that do not occur. The economic analysis in the EIS adheres to this principle to prevent the double counting that would occur if impacts were described under each alternative both for projected actions and actions that are not projected to occur. In terms of recreation, an opportunity cost can be implied from the discussions of relative use increases and decreases for non-motorized and motorized forms of recreation in the site-specific appendices.

Comment 8.8: The DEIS economic data for recreation are outdated. Current studies of wilderness use and value (willingness to pay) need to be cited. Colorado studies show $12 per day. **Response:** The FEIS now applies a dollar value of annual local personal income to a recreation visitor day (RVD). The dollar value used is approximately $12 per RVD. Economic value of resource outputs is no longer analyzed in this EIS for reasons given in Addendum 1.

Comment 8.9: Use of mountain bikes should be discussed in the EIS and added to the Chapter 3 recreation table if such use occurs. **Response:** Mountain bike use has not been observed to be a primary recreation activity in the Oregon WSAs.

Comment 8.10: Rock collecting in the WSAs is not adequately addressed in the EIS. **Response:** Rock collecting is addressed in those appendices where substantial use occurs or where popular areas exist. Table 3-10 lists rockhounding as one of the primary recreation activities in the WSAs.

Comment 8.11: The EIS fails to provide data showing demand for and support of wilderness recreation. **Response:** The EIS provides estimates of existing recreation use in the WSAs. Some of this use is documented to be primitive recreation use. From these estimates and knowledge of the area, recreation professionals have predicted changes in recreation use in the WSAs under each alternative. Increases are predicted in many WSAs under wilderness designation. This increased use could be considered as demand for wilderness recreation. However, it should be noted that wilderness, as defined by Congress in the 1964 Wilderness Act, is more than just a recreation value and does not require wilderness recreation demand to be recognized as a wilderness resource.

9. Socioeconomic Values

Comment 9.1: The EIS fails to identify the economic benefits of wilderness designation. These benefits include the value of wilderness itself (even $1.00 per acre), recreation, wildlife, air and water quality, and lack of a subsidy (as a positive economic benefit to taxpayers) if range improvements are not built and AUMs are not increased. **Response**: The EIS no longer addresses economic value as an issue for reasons identified in Addendum 1. Economic impacts are now analyzed in terms of local personal income from resource outputs in the WSAs. Local personal income derived from recreation visitor days includes those visitor days attributed to wilderness use.

Comment 9.2: Economic impacts should be related to the statewide and national situations. The economic value of timber harvest foregone should be related to statewide timber yield. The same applies to grazing and minerals impacts. **Response**: Again, economic value is no longer an issue in this EIS for reasons given in Addendum 1. The EIS does provide information on statewide levels of timber harvest and grazing use on BLM-administered lands for analytical baseline purposes. However, comparisons of expected changes in levels of use to statewide or national use levels are generally not made in this EIS. Such comparisons of any resource values or uses in the WSAs, which amount to only 0.04 percent of all lands in Oregon, would render those values insignificant. The impacts are therefore objectively described relative to the WSAs in the EIS area.

Comment 9.3: The economic impacts of grazing (both AUMs and range developments) are unrealistically based on a $2.36 per AUM value. The actual figure is $1.35, while true economic value is $7.35 per AUM. The demand for grazing should be analyzed at the $7.35 figure. In addition, the economic benefits of increased grazing are short-term only. The long-term cost is damage to the land. **Response**: Economic value is no longer addressed as an economic impact issue for reasons given in Addendum 1. See the response to Comment 5.3 regarding analysis of grazing demand if the grazing fee was increased. With respect to grazing use increases, the grazing regulations prohibit authorization of grazing increases without evidence of sufficient forage to sustain the increase and without safeguards for sensitive areas within the affected allotments.

Comment 9.4: The economic analysis is inaccurate because the information on which it is based is speculative. **Response**: The CEQ Regulations require EISs to analyze reasonable foreseeable development scenarios when future actions or impacts are uncertain. Unlike many EISs, this Wilderness EIS is not based on a specific project proposal, but instead must project over an approximately 50 year period what actions are likely to occur under alternative mixes of wilderness and nonwilderness allocations. As such, the economic analysis must be based on these resource use projections. The projections are based on best professional judgement utilizing resource information at hand and estimates of future trends in technology and demand.

Comment 9.5: Use of local personal income for economic analysis is biased toward commodity development. Income spent on range developments is shown as a benefit when in fact it is a cost. Economic losses are not real, but instead are opportunities foregone, especially since grazing is a grandfathered use. **Response**: The EIS uses local personal income as an indicator of economic impact on the human environment. It applies to resource outputs that can be wilderness-related (such as primitive recreation use) as well as nonwilderness-related. Costs associated with range developments are included in the figure of local personal income generated per AUM of livestock use, since these costs represent income to those constructing, maintaining or supplying materials for the developments.

This EIS does not attribute economic impacts to foregone opportunities. Economic impacts are only attributed to changes in resource outputs from the existing situation, whether increases or reductions. Only livestock use reductions from current levels are portrayed as an economic loss. Livestock use increases are given a dollar value only under those alternatives where they are projected to occur.

Comment 9.6: The EIS fails to adequately assess the negative impacts of wilderness designation on the State's economy. Losses of transfer payments related to oil and gas and geothermal leases should be considered, as well as the costs of acquisition of private land (and mineral estate). **Response**: The FEIS focuses on scenarios of reasonably foreseeable development as the basis for impact analysis of the various alternatives. Energy and mineral development scenarios describe exploration and development of mines, oil and gas wells, and geothermal powerplants likely to occur over the next 50 years. However, energy and mineral production and the income derived from it as well as from leasing revenues were not estimated for reasons given in Addendum 1. The EIS qualitatively recognizes the economic impacts of projected energy and mineral development as an unknown increase in local personal income where such development would occur under a given alternative.

With respect to acquisition costs, the EIS uses the term, "acquisition," to include both purchase and exchange. Acquisition is neither automatic upon wilderness designation nor necessary for any area to be designated as wilderness. In addition, recent experience in BLM has shown success in acquiring lands via exchange rather than purchase, and it would be difficult to predict the proportion of acquisitions that would involve purchase rather than exchange. Exchanging would have little, if any, personal income effects. Therefore, the EIS does not analyze the cost of acquisitions.

Comment 9.7: The benefits of intensive resource management are insufficiently described. For example, lack of intensive fire suppression under wilderness management would result in more major fires with greater economic impacts. **Response**: There is no evidence to support the assumption that wilderness management would result in greater economic impacts, such as those related to more major fires. Wilderness designation does not preclude full fire suppression when human lives or property are threatened. Therefore, no substantial differences between wilderness fire management and nonwilderness fire management with respect to resource outputs in the local area are foreseen.

Comment 9.8: Input-output studies done for five different areas of eastern Oregon should have been used in the EIS. Also, the actual value of an AUM in Baker County is much higher than the IMPLAN model shows. **Response**: Information from several eastern

Oregon input-output studies was used in the estimation of local personal income. The local personal income figure applied in this Final EIS to livestock use is now an average AUM figure for the total affected area in the State.

Comment 9.9: The economic analysis should include the evaluation of which alternative maximizes the net present worth of the public investment of time and resources. **Response**: The information needed to determine this was provided in Table 4-19 of the Supplement to the Draft EIS. However, economic value is no longer addressed as an EIS issue for reasons given in Addendum 1 of this Final EIS.

Comment 9.10: The EIS fails to assess the economic impact of road closures on management of adjacent areas as well as wilderness. The cost to the rancher is underestimated. **Response**: In terms of local personal income, increased management costs to ranchers or others from road closures would be increased income to those performing the increased labor. The net effect would be zero. In those site-specific appendices where a projected road closure under a particular alternative was pointed out to have a major economic impact to a ranch operation (due to unique circumstances related to required frequent use of a loop road during winter operations and a short road closure requiring a lengthy return trip), the appendix identifies this substantial cost.

Comment 9.11: The description of social conditions in the Draft EIS relative to wilderness is biased and inappropriate. The impact analysis does not recognize any impacts on local and national social/cultural/spiritual values that will result from the loss of wilderness. Social impacts are not the same as economic impacts. Spiritual and mental health values are dismissed as an issue, yet these values are social effects that are more affected by wilderness decisions than the economic factors that the DEIS treats as social effects. **Response**: Social/cultural/spiritual values are commonly attributed to wilderness, although the degree to which they are considered inherent and the level to which they are so valued varies greatly among individuals. In addition, these essentially mental values would be extremely difficult to quantify for analysis purposes. The only measure of change among the alternatives that could be used to document impacts on these values would be the different acreages of designated wilderness under each alternative. The social impacts related to changes in distribution of economic gains and losses within the local population are no longer addressed in the EIS due to the insignificance of these changes in the affected area.

Comment 9.12: The EIS fails to assess the impacts of wilderness designation on native claims ceded lands. **Response**: Since the treaties involving these lands provided that treaty Indian tribes could exercise reserved rights on the ceded lands, wilderness management of any of these lands would have little if any affect on the established traditional exercise of these rights. As such, no significant impacts are expected from wilderness designation.

Comment 9.13: The EIS fails to recognize the unrealized potential economic value for wildlife, mineral and recreation resources. It also fails to describe the economic value of minerals to a diversified economy for eastern Oregon, or of minerals on split estate as a contribution to the State school fund. **Response**: The FEIS no longer addresses economic value as an EIS issue for reasons given in Addendum 1. Changes in local personal income are now used as the primary measure of impacts on the local economy. Local personal income figures were derived for recreation, which includes wildlife viewing, nature photography and hunting, among other forms of recreation. A local personal income value was not calculated for mineral production for reasons identified in Addendum 1. However, economic impacts of mineral development were described qualitatively as an unknown level of increase in local personal income where projected to occur under a particular alternative.

Comment 9.14: The EIS does not recognize that ranchers will need to diversify as consumption of red meat continues to decline. Opportunities such as dude ranching or commercial outfitting, components of which may be compatible with wilderness, should be considered. **Response**: The EIS analysis considers scenarios of likely future uses of the lands based on current and expected trends and the resource values themselves. With respect to diversifying, the scenarios predict future livestock use adjustments and changes in recreation use levels and types of use, which may or may not be realized as a conscious effort to diversify.

Comment 9.15: The EIS should consider the social/economic disruption caused by boom and bust cycles of resource development. **Response**: The EIS analyzes the net effects of projected resource development over an approximately 50-year period. Specific analyses with respect to potential boom and bust cycles on local communities would be conducted as actual projects, such as major mining plans of operation, are proposed.

10. Other Resources

Comment 10.1: Potential resource outputs from WSAs should be compared to the total available resources on other public lands and all lands in the state. These statewide and regional resources should be considered as a basis for impacts of the alternatives. **Response**: The EIS does provide information on statewide levels of some resources or uses, such as timber harvest or livestock grazing on BLM-administered lands. And information regarding regional resources and availability was used to develop reasonable foreseeable development scenarios for resources within the WSAs (e.g., development of a particular mineral resource may not have been projected in a WSA due to more readily accessible deposits elsewhere). However, comparisons of expected changes in levels of use to statewide or national use levels are generally not made in this EIS. Such comparisons of any resource values or uses in the WSAs, which amount to only 0.04 percent of all lands in Oregon, would render those values insignificant.

Comment 10.2: The EIS fails to analyze cumulative impacts, including the impacts of other agency programs. **Response**: The EIS does address cumulative impacts where such impacts on a particular resource are expected to occur due to a combination of expected actions, regardless of the proponent of each action, agency or private. The statewide volume is essentially a cumulative impact document for the statewide wilderness program.

Comment 10.3: The secondary impacts of the alternatives on adjacent lands should be analyzed (e.g., impacts of grazing increases under Alternative 7, impacts of uncontrolled fire under wilderness management, and impacts of wilderness designation on air quality classification, wilderness being the basis for redesignation to Class I air quality standards which restrict adjacent uses, especially burning). **Response**: The impacts of grazing increases on lands outside of the WSAs have already been analyzed in the EISs on the land use plans that proposed the increases. This EIS generally does not address impacts on adjacent lands from wilderness designation, since buffering, or applying undue restrictions on adjacent lands due to wilderness designation, is specifically prohibited in the wilderness management regulations. See the response to comment 9.7 regarding fire suppression under wilderness management. With respect to air quality classification, the only WSA for which reclassification would be considered to have a significant impact on current management (i.e., slash burning in the vicinity of the Soda Mountain WSA) was found to not qualify for reclassification under the Clean Air Act. The WSA is well under the 10,000-acre size limit.

Comment 10.4: The EIS should analyze additional wildlife species not addressed in the Draft EIS, such as kit fox, cougar, snowy plovers, sandhill cranes, ferruginous and Swainson's hawks, burrowing owls, Lewis' woodpecker, black-throated sparrows, willow flycatchers, yellow warblers, sage grouse, sage sparrows, Brewer's sparrows and sage thrashers. Special resources and features should be shown on maps. **Response**: The Final EIS addresses all wildlife species of special interest, including Federally listed species, candidates for Federal listing, and State listed species. A number of the species listed above now fall into these categories (e.g., kit fox, snowy plover, ferruginous and Swainson's hawks, and sage grouse). In addition, pertinent site-specific appendices address other species of concern found in the WSAs, including all of those listed in the above comment. Information used for this analysis included recent inventories and studies by BLM and others on several of these species, such as the 1986 cooperative study on the status and distribution of greater sandhill cranes in Oregon and the recent study and ongoing inventory of snowy plovers in Oregon. The FEIS now also includes maps of special features where they are considered mappable (e.g., migration corridors as opposed to random sightings) and not self evident in the text (e.g., involving the entire WSA). However, sensitive locations (e.g., sage grouse strutting grounds and burrowing owl burrows) are not mapped in order to protect these sites.

Comment 10.5: The issue of water rights in wilderness is not discussed. **Response**: Water rights are not discussed as an issue in the EIS because wilderness designation is not expected to affect the present status of water rights in the WSAs. Current guidance given to BLM is that federally reserved water rights are not implied by wilderness designation.

Comment 10.6: Existing power site withdrawals should be identified, both in text and maps. **Response**: The Interrelationships discussion in Chapter 2 and Table 2-5 identify, in detail, existing designations for waterpower potential. Mapping of these designations and any further discussion of them was considered unnecessary for reasons given in the text.

Comment 10.7: A discussion of visual resources is lacking in the EIS. **Response**: Visual resources are generally covered through the discussions of naturalness and special wilderness features throughout the EIS and appendices.

Comment 10.8: The analysis does not address the existence of inventory wild and scenic rivers. **Response**: The National Park Service's Nationwide Rivers Inventory included three rivers affecting WSAs in this EIS. The Interrelationships discussions in Chapter 2 of the Statewide Volumes of the Draft EIS and the Supplement identify the North Fork of the Crooked River as one of these rivers. The other two rivers were described as already having a designation (i.e., a National Wild River designation for the Owyhee River and a State Scenic Waterway designation and study recommendation for designation as a National Scenic River for the John Day River). This Final EIS describes all three rivers and others in the WSAs as recently designated National Wild and Scenic Rivers.

Comment 10.9: The list of EIS preparers does not include the preparers' credentials. **Response**: The listing of related professional experience is considered sufficient in representing the preparers' qualifications.

11. Adequacy of Alternatives

Comment 11.1: The Conflict Resolution Emphasis alternative (Alternative 3) recommends more acres as suitable for wilderness designation than the Proposed Action. **Response**: As defined in the descriptions of the alternatives in Chapter 2, the Conflict Resolution Emphasis alternative is primarily a consolidation of the Partial Alternatives in the appendices, using the Proposed Actions for those WSAs that do not have a Partial Alternative. A Partial Alternative was analyzed in any appendix where there was a potential opportunity to minimize conflicts between wilderness designation and other projected resource uses. For reasons provided in the rationale sections of each appendix, the proposed action may not have adopted options to minimize conflicts in favor of eliminating the conflicts altogether through a nonsuitable designation or for other reasons. As such, the statewide consolidation of Proposed Actions would have fewer acres recommended as suitable than the consolidation of Partial Alternatives.

Comment 11.2: An alternative should be analyzed that recommends the All Wilderness Alternative plus the expanded boundaries, acquisitions and road closures of the Wilderness Emphasis Alternative. **Response**: Such an alternative was not analyzed in the EIS for a variety of reasons. First, such an alternative would not substantially differ for analysis purposes from the All Wilderness Alternative. The areas being recommended for wilderness would be the same as those in Alternative 1 with some minor additions (amounting to an approximately 2.8 percent increase in acreage). Second, such an alternative would merely perform a mathematical function while duplicating the analyses in the All Wilderness and Wilderness Emphasis alternatives. And third, this alternative would diverge from the basic wilderness enhancement objective of the Wilderness Emphasis Alternative by ignoring the recommendations for deleting some areas from the suitable recommendations to eliminate significant wilderness manageability problems. All elements of such an alternative are included in the alternatives analyzed in this EIS.

Comment 11.3: An alternative should be analyzed that expands the boundaries of suitable recommendations to include entire ecological communities or watersheds. **Response**: The enhanced alternatives of the site-specific appendices considered these opportunities where feasible within the parameters of delineating an area that could be adequately managed to protect its wilderness values into perpetuity. See the response to comment 11.4 below regarding analysis of alternatives addressing acreages greatly exceeding those represented by the WSAs and the limited expansions considered in this EIS.

Comment 11.4: The EIS should analyze the Sage Alternative (a proposal to study 2.5 million more acres than are analyzed in this EIS). **Response**: The Sage Alternative was not analyzed in this EIS because it proposes study of a substantial amount of lands that were found lacking in wilderness characteristics through application of established wilderness criteria during the wilderness inventory. The proposal challenges the criteria used by BLM to inventory roadless areas and determine which ones qualified for study, particularly the criteria related to opportunities for solitude and primitive and unconfined types of recreation. These criteria were felt to overemphasize anthropocentric values of wilderness, such as wilderness recreation. Admittedly, the judgements involved in deciding which lands were to be included in the wilderness studies were necessarily subjective. Because of that, BLM made a concerted effort to involve the public to the maximum possible extent in developing the process for identifying the lands to be studied and in the imlementation of that process. There was widespread public support for BLM's proposal to use criteria verbatim from the 1964 Wilderness Act, including the elements in the legislative definition of wilderness involving outstanding opportunities for solitude or for primitive and unconfined types of recreation. Hundreds of public meetings were held throughout the West to discuss BLM's proposed decisions on which lands were to be included in the study areas, and thousands of public comment letters were reviewed.

Almost all of the study areas in Oregon were designated by November 1980, and opportunities were again provided for public involvement with the decisions. The 30-day protest period resulted in six protests involving approximately 600,000 acres in Oregon, which were being eliminated from wilderness review. Following BLM's response to these protests, only three appeals to the Interior Board of Land Appeals (IBLA) were filed concerning the elimination of approximately 200,000 acres from wilderness review. The appeals were subsequently settled through IBLA decision.

Thus, the inventory results being challenged by the Sage Proposal were developed through a process that utilized extensive public input in applying the Wilderness Act criteria to the BLM roadless areas.

Comment 11.5: The EIS should analyze the Sierra Club Proposal which consists of four high desert wilderness proposals (i.e., The Greater Steens Proposal, The Lower Owyhee Proposal, The Lava Flows Proposal, and The Great Basin Proposal). **Response**: The four high desert wilderness proposals provide comprehensive packages of unique and interrelated wilderness values utilizing an ecosystem type of approach for wilderness designation. These packages were not analyzed as a specific statewide alternative, however, because together they call for wilderness designation of about 52 WSAs in their entirety, out of the 85 WSAs in the EIS. Taking into account the additional WSAs recommended for wilderness in the letters defining the Sierra Club Proposal, the EIS analysis of the All Wilderness Alternative was felt to adequately cover the analysis needs of the Sierra Club Proposal.

Some letters from individuals supporting the Sierra Club Proposal portrayed the high desert proposals as single wilderness complexes encompassing all lands within the outer boundaries of each complex. As all of the lands in between the WSAs are either non-Federal, not roadless, or found through application of wilderness inventory criteria to lack wilderness values, such a proposal was not analyzed in the EIS for reasons provided in the response to comment 11.4 above.

Comment 11.6: The EIS should analyze an alternative that protects wild lands in the absence of wilderness designation. Wilderness is too restrictive, but other available designations are not restrictive enough. **Response**: It is beyond the scope of this EIS to consider new designations for areas aside from wilderness designation. This wilderness study represents a land use plan amendment that adds consideration of wilderness values and potential designation to previously established plans for the affected areas. Management of other "wild lands" will be reconsidered through the normal review and update cycles of existing plans.

Comment 11.7: The Commodity Development Emphasis alternative is not legal under FLPMA and NEPA. **Response**: As stated under Standard Management Practices in Chapter 2, current laws, regulations and policies would continue to apply to all alternative management programs. Actions projected to occur under Alternative 6 would be subject to these requirements, including required environmental analysis prior to implementation on the public lands.

Comment 11.8: It is illegal to consider road closures under the alternatives. BLM is creating wilderness through the closures. If closed, ranchers will be given special road use privileges and will be able to control wilderness and charge fees for access. **Response**: BLM has authority to close roads under its jurisdiction for reasons of safety, resource protection, lack of need or lack of maintenance funds. Such closures are normally handled through the BLM's ORV designation procedures or in an overall land use planning effort. Recommended closure of primitive BLM roads in this EIS is not intended to create wilderness, since the closures are not required for wilderness designation of the WSAs, which have already been established as having wilderness values. The closures have been identified for analysis purposes to indicate opportunities to enhance manageability of overall wilderness areas by combining areas separated only by primitive, BLM roads that are not sole access to private property or necessary for resource management. As stated in the EIS, ranchers would only be allowed vehicle access, where no other means are practical, for specific purposes related to their livestock operations under conditions specified under their permits.

12. Objectivity of the Analysis

Comment 12.1: The document shows an anti-wilderness bias through its focus on commodities. There is great quantity and detail of information on grazing and minerals, and a lack of data on natural resources, including botanical resources and wilderness values. **Response**: The EIS analyses include a great deal of information on all resources in the WSAs. The ability to quantify commodity information may give the appearance that more emphasis is being placed on them. However, for those resources, such as wilderness values and botanical resources, that do not lend themselves easily to quantification, the EIS attempts to qualitatively document the data and analyses in detail.

Comment 12.2: The EIS shows an anti-wilderness bias through word choice (e.g., the recreation impact discussion indicates that wilderness users would "focus" on areas designated wilderness, while vehicle users would be "displaced" from wilderness areas; wilderness would provide opportunities for people who are "capable and willing" to hike, backpack, etc.; and under cultural resources, not designating would "simply" leave cultural resources unprotected). **Response**: This language no longer appears in the EIS.

13. Clarity of the Document

Comment 13.1: The document is readable, comprehensive and thorough. A great deal of usable information is documented. **Response**: The FEIS provides additional information gained since completion of the Supplement to the DEIS (SDEIS). See also the discussion of the changes between the SDEIS and FEIS in Chapter 1 regarding changes in format and content.

Comment 13.2: The EIS contains some sexist language (e.g., "man-made" and the use of masculine pronouns when refering to land managers and resource users). **Response**: An attempt has been made to remove such references throughout the document.

Comment 13.3: Use of the terms "preferred alternative" and "proposed action" in the same document is very confusing to the reader. **Response**: The FEIS now uses the term, "Proposed Action," for the alternatives representing BLM's recommendations in the site-specific appendices and for the consolidation of those alternatives into the statewide analysis as Alternative 5.

Comment 13.4: The glossary should define the quality standards used in the wilderness study. **Response**: Under the discussion of wilderness review procedures in Chapter 1, the EIS references the Wilderness Study Policy, 1982, as the source of information on the wilderness planning criteria and quality standards used to arrive at wilderness suitability and nonsuitability recommendations. The information is considered too lengthy to reproduce in the glossary.

Comment 13.5: The EIS should include better maps with more resource subject matter, such as vegetation resources and waterpower withdrawals. **Response**: The FEIS now includes maps of special features where they are considered as significant mappable features (e.g., an unusual vegetation assemblage rather than general vegetation) that are not already self evident in the text (e.g., features covering the entire WSA). However, sensitive locations, such as threatened or endangered species sites, are not mapped in order to protect these sites. See the response to comment 10.6 regarding mapping of waterpower withdrawals.

Addenda

Addendum 1 Local Personal Income Related to Resource Outputs

Personal income is composed of payments to people in the form of wages, rents, interest and profit. In this EIS, effects on the local economy are measured primarily by changes in local personal income.

Income to local residents is produced for example, when cattle raised on BLM forage are sold or when recreationists make purchases in the area. A portion of the income received by local residents is spent on other purchases within the local community, and a portion of those receipts again may be spent locally.

The end result of this respending activity within a community is called a multiplier effect. An economic model of inter-industry relationships within a local area is used to estimate multiplier effects. The multiplier effect for the affected areas in Oregon was calculated with the aid of the IMPLAN modeling system of the U.S. Forest Service (1982).

Table A-1 shows the local personal income per unit of output used in the economic analysis. These figures were derived from IMPLAN models for sub-state regions with the local personal income per unit of output aggregated to a statewide value through the use of weighted averages. The statewide value shown was then rounded to the nearest whole dollar for use in the statewide analysis and in the economic analyses in the site-specific appendices. The data in Table A-1 represents the total change in local personal income that might be expected with a one unit change (either increase or decrease) in output.

Statewide local personal income values were not calculated for projected energy and mineral development. The timing, duration and degree of such development is highly speculative, and production from projected development cannot be estimated with any reasonable degree of accuracy given the current level of information regarding the existence or potential for occurrence of energy and mineral resources in the WSAs. Rapidly changing mineral development technology further complicates any attempt to credibly translate projected development over the next 50 years into numbers of jobs and salary levels. The EIS qualitatively recognizes that there would be some level of increase in local personal income attributable to energy and mineral development under those alternatives where such development is projected to occur.

Oil and gas and geothermal leasing revenues were also not factored into the local personal income analysis. Retention of existing leases and issuance of new leases throughout the WSAs over the next 50 years could not be estimated with any reasonable degree of accuracy, and the portion of these revenues attributable to local personal income would be insignificant compared to production-related income from projected energy development.

It should be noted that the EIS no longer discusses "economic value" as an element of economic impact of the proposed action and alternatives. Economic value was originally used to arrive at benefit/cost (B/C) analyses of proposed range projects and was applied to other proposals/resource outputs as well. Information leading to economic value figures for proposals came from planning documents identifying the proposed projects. The FEIS now focuses on resource use projections (hypothetical scenarios) 50 years out and is no longer tied to existing plans or based on plan data. As such, there is no longer an economic basis for economic value formulation. In addition, B/C ratios and economic values, although helpful in making decisions on specific project proposals, do not effectively represent environmental consequences.

Table A-1. Local Personal Income Per Unit of Output (1981 dollars, except timber harvest[1])

Resource Output	Unit	Local Personal Income (Per Unit)
Livestock Grazing	AUM	$ 12.15
Recreation	RVD	$ 11.67
Timber Harvest	Mbf	$269.98

AUM = Animal Unit Month
RVD = Recreation Visitor Day
Mbf = Thousand Board Feet

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[1] Timber harvest value (1983 dollars) based on FY 1983 average BLM timber sale price per Mbf in local areas.

Addendum 2
Mineral Supply and Commodities Information

As an analytical baseline for impact analysis, the following mineral information indicates the significance of minerals with respect to scarcity, uses, and future demands likely to be found in the Oregon WSAs.

Mineral supply forecasts are based on politically-available proven reserves. Such forecasts show that some mineral reserves will only last one or two generations at expected consumption levels. In many cases, however, reserves have increased due to the discovery of new mineable deposits and new technology for retrieving previously uneconomic deposits.

Not enough is known about worldwide mineral deposits to make firm projections about the future availability of minerals. Mineral exploration relies heavily on geologic inference with the aid of geophysics and geochemistry.

The reserve base includes those minerals that are currently economic (reserves), marginally economic (marginal reserves), and subeconomic (subeconomic reserves). Reserves are a part of the reserve base that could be economically extracted, whereas marginal reserves border on being economically producible. Economic and technologic factors may affect the economic uncertainty of marginal reserves.

To reflect varying degrees of geologic certainty, undiscovered resources may be divided in two categories, hypothetical and speculative. Hypothetical resources may be reasonably expected to exist in the same producing district or region and under analogous geologic conditions as similar known mineral bodies. Speculative resources may occur either in favorable geologic settings where mineral discoveries have not been made, or in types of deposits as yet unrecognized for their economic potential.

Of the minerals having an international market, domestic resources of bentonite, beryllium, boron, copper, diatomite, lead, lithium, molybdenum and sodium appear to be sufficient to supply U.S. needs for established uses in the forseeable future. The U.S. relies on imports of asbestos, chromium, fluorite, gold, manganese, mercury, oil and gas, potassium, silver, tin and zinc.

Of the minerals having a national market, the domestic reserves of pumice, metallurgical grade limestone, perlite, optical calcite, and uranium are expected to adequately supply the domestic demand. The industrial minerals of pumice, perlite and metallurgical grade limestone are in demand throughout the country, whereas the American uranium industry has experienced a set back due to a decline in new orders for nuclear powerplants. Recently, optical calcite for prisms is said to have been in demand for use in laser technology.

Minerals marketed on a regional level include geothermal energy, slab lava, zeolites, limestone, and semi-precious stones. Semi-precious stones comprise a large variety of minerals including agate and jasper. Annual production of these stones is hard to measure since a significant amount of material is collected by individual hobbyists.

Sand, gravel, aggregates and cinders are mineral commodities with a local market. The location, tonnage, quality, accessibility and economic availability to the local market are all factors in determining the value of such commodities. In some areas of the country, urban encroachment precludes future development of valuable deposits of sand, gravel and aggregates, and thus reduces availability of needed supplies. An increase in demand for such commodities is likely in the future. Nationwide, cinder deposits are much less common than sand, gravel and aggregate deposits since they occur only in volcanic vent areas. Within certain local markets, demand for cinders as low-priced road surfacing material is expected to increase in the next decade.

Table A-2 describes the uses and demands for minerals having potential for occurrence in Oregon WSAs. Due to the unavailability of market, price or production data, slab lava, zeolites, cinders, optical calcite, semi-precious stones, sand and gravel, and limestone are discussed separately in this addendum (see below) and are not included in the table. The energy commodities are also discussed separately and are not included in Table A-2.

Slab Lava

Basaltic lavas, especially the recent lava flows, tend to fracture into thin slabs, sometimes only 1/2 to 2 inches thick. These slabs are easy to work with and are used as a decorative “slap-on” type veneer. A 1979 study for BLM showed that retail prices in the Portland market were $290 a ton for Shoshone, Idaho lava (1-1/2 inch slabs) and $100 a ton for massive slab lavas 3 to 4 inches thick. Quarry cost f.o.b., was computed at $175 per ton for the thin lava and $50 per ton for the massive lava.

Table A-2. Mineral Commodity Summary (1987)[1]

	U.S. Production/Consumption				
Mineral Commodity	Production in 1987	% of World Production	% Imported[2] (or Exported as noted)	Projected[3] Annual Demand Increase	Price Trends
Asbestos	52,000 short tons	less than 2%	51%	none	Average price per ton f.o.b. mine: 1983 ($399), 1984 ($422), 1985 ($357), 1986 ($338), 1987 ($342)
Bentonite	2,800,000 short tons	data unavailable	exported	2% -4%	Price data not available. Average values per ton for 1981: $2.30 for Wyoming bentonite, $30.68 Montana, and $24.62 Mississippi
Beryllium	280 short tons	64%	11%	4%	Average price per pound of metal: 1983 ($206), 1984 ($213), 1985/($255), 1986 ($225), 1987 ($225)
Boron (Boria, B_3O_2)	686,000 short tons	53%	exported	3.20%	Average price per ton granulated borax, f.o.b. mine: 1983 ($201), 1984 ($208), 1985 ($214), 1986/ ($220), 1987 ($226)
Chromium	none	0	75%	6.50%	Turkish high-chromium chromite per metric ton: 1983-84 ($110), 1985-86 ($125), 1987 ($100). South African high-iron chromite per metric ton: 1983-84($52), 1985-86 ($42), 1987 ($46)
Cinders	See separate discussion in preceding text.				
Cobalt	none since 1971	0	86%	3%	Price ranges per pound: 1983 ($5.79), 1984 ($10.40), 1985 ($11.43), 1986 ($7.49), 1987 ($6.50)

Use and Percent of Consumption	Occurrences in Oregon
Asbestos-cement pipe 17%, friction products 22%, roofing 17%, coatings and compounds 15%, paper 11%, and all others 18%.	No commercial production in Oregon; known occurrences in Oregon have had core drilling and bulk sampling, domestic demand at lowest level since 1940.
Drilling mud 44%, iron ore pelletizing 12%, foundary sand bond 16%, others 28% including animal feed binder, water proofing and sealing, etc.	Bentonites in Oregon generally thought to be calcium-rich variety, though some known to be high in sodium. Oregon bentonites are used mostly for pond and ditch sealants, binders, and cat litters.
Alloy and metal in aerospace and defense applications 22%, electrical equipment 56%, other applications 22%.	Beryllium occurrences of any significance are not known in Oregon.
Glass products 59%, detergents 7%, agricultural 4%, other 30%.	Southern portion of Alvord desert, near Borax Lake, has geologic charcteristics favorable for major borax deposits, Borax was produced from this area in commercial quantities around 1900.
Metallurgical and chemical industry 90%, refractory industry 10%.	Strawberry Mountain and Aldrich Mountain areas in eastern Oregon include Alpine-type chromite deposits in podiform shapes. Total past production from these deposits is 30,000 tons. Most ores mined were high-chromium type though some higher grades of high-alumina types were also mined.
Superalloys (mainly gas turbine engines) 48%, electrical applications 19%, driers 14%, catalysts 7%, magnetic alloys 10%, others 21%.	Cobalt in eastern Oregon reported from copper - cobalt-gold veins in Quartzburg mining district, Grant County. Geological setting south of Canyon City (Strawberry Mountain and Aldrich Mountain) favorable for byproduct cobalt in nickel deposits.

Table A-2. Mineral Commodity Summary (1987)[1] (continued)

Mineral Commodity	U.S. Production/Consumption				Price Trends
	Production in 1987	% of World Production	% Imported[2] (or Exported as noted)	Projected[3] Annual Demand Increase	
Copper	1,270,000 metric tons	15%	25%	1.9%	Average price cents per pound domestic copper wirebar: 1983 (76.5), 1984 (66.8), 1985 (67.0), 1986 (66.1), 1987 (80.0)
Diatomite	665,000 short tons	33%	exported	3%	Average price per ton of diatomite f.o.b. plant: 1983 ($185), 1984 ($193), 1985 ($200), 1986 ($204), 1987 ($203)
Energy Commodities	See separate discussion in preceding text.				
Fluorite	80,000 short tons	1.5%	88%	2.70%	Average price of acid-spar per short ton: 1983 ($180), 1984-87 ($173)
Gold	4,900,000 troy ounces	9%	(see below)[6]	2.4%	Average price per ounce: 1983 ($424), 1984 ($360), 1985 ($317), 1986 ($368), 1987 ($444)
Lead	330,000 metric ton	9.8%	15%	1.30%	Cents per pound: 1983 (21.7¢), 1984 (25.6¢), 1985 (19.1¢), 1986 (22¢), 1987 (36.0¢)
Limestone	See separate discussion in preceding text.				

Use and Percent of Consumption	Occurrences in Oregon
Electrical 24%, construction 42%, industrial machinery 13%, transportaton 11%, other 10%.	Eastern Oregon includes geologic characteristics favorable for two major types of copper deposits, porphyry copper and massive sulfides. Copper mining and refining are important source of many other metals. In 1982 they yielded: all domestic production of primary arsenic, selenium, tellurium, platinum and palladium, about 20% of primary gold, about 27% of silver, and nearly 40% of primary molybdenum.
Filter aid 67%, industrial fillers 17%, others 16%.	Large deposits of diatomite and diatomaceous earth are found in eastern Oregon. One firm produces diatomite from Christmas Valley, Lake County for use as oil and grease absorbents and cat litter. Another firm has announced plans for large scale production of filter grade diatomite from deposits near Drewsey, Harney County.
About 70% of fluorspar (the ore of fluorite) consumed in U.S. in 1984 went into manufacture of hydrofluoric acid and 30% as a flux for steel making.	Fluorite occurs in an unconventional-type deposit in Oregon. This bedded deposit in lake sediments near Rome, Malheur County is conservatively estimated to contain 12 million tons of fluorite. Grade is low; higher grades contain 16.4% fluorite.
Jewelry and arts 59%, industrial (mainly electronic) 33%, dental 8%.	Relatively high prices continued to stimulate exploration and development, especially in the western states. Production of gold centered at two opposite corners of Oregon, northeast at Blue Mountains and southwest at Klamath Mountain, mostly from placer and some from lode mines. These areas were also sites of increased exploration activities. Increasing interest to explore for submicroscopic particles of gold in volcanic areas of Malheur and Harney Counties was observed. This previously unknown gold province seems to be in the early stages of discovery.
Transportation 70%, construction, ammunition, electrical, TV glass, ad paint 26%, other 4%.	No commercial production in Oregon; geologic characteristics are favorable for the occurrence of lead in the Siskiyou Mountain area of southwest Oregon. Substitution by plastics has reduced the use of lead in building construction, electrical cable covering, and in cans and containers.

Table A-2. Mineral Commodity Summary (1987)[1] (continued)

Mineral Commodity	U.S. Production/Consumption Production in 1987	% of World Production	% Imported[2] (or Exported as noted)	Projected[3] Annual Demand Increase	Price Trends
Lithium	W	W	exported	8.9%	Year-end prices per pound for lithium carbonate and lithium hydroxide monohydrate, respectively: 1983 ($1.48 & $1.93), 1984 ($1.54 & $1.93), 1985 ($1.50 and $1.93), 1986 ($1.50 & $1.93), 1987 ($1.55 & $1.97)
Manganese	None	0	100%	Negligible	Price range for metallurgical ore per long ton unit: 1983 ($1.38), 1984 ($1.42), 1985 ($1.43), 1986 ($1.34), 1987 ($1.27)
Mercury	W	W	W	less than 1%	Average price per flask[4] at New York: 1983 ($322), 1984 ($314), 1985 ($311), 1986 ($233), 1987 ($300)
Molybdenum	65,000,000 pounds	36%	exported	0.80%	Year-end price per pound, concentrate, 1983 ($3.64), 1984 ($3.56), 1985 ($3.33), 1986 ($2.92), 1987 ($3.25)
Nickel	0	0	74%	2.50%	Average price range per pound of nickel metal, N.Y.: 1983 ($2.20), 1984 ($2.22), 1985 ($2.26), 1986 ($1.86), 1987 ($2.15)
Optical Calcite	See separate discussion in preceding text.				

Use and Percent of Consumption	Occurrences in Oregon
Ceramics and glass industry 40%, primary alumninum production, lubricants and greases 45%.	Lithium has been observed in higher than normal amounts in water and clays of southeast Oregon. Of particular interest is the McDermitt Caldera where clays are enriched in lithium, some containing 0.36% Li. U.S. Bureau of Mines is developing methods of extracting lithium from McDermitt Caldera clay.
Iron, steel and chemical industry end uses were construction 20%, transportation 13%, machinery 9% and others 58%.	Small amounts of manganese have been produced in Oregon from pre-Tertiary formations in the northwest (Baker and Grant Counties) and the southwest (Coos, Curry, Douglas, Jackson and Josephine Counties).
Electrical 51%, electrolyic production of chlorine and caustic soda 19%, mildew-proofing paint 11%, industrial and control instruments 7%, other 12%.	Mercury occurrences are widespread in Oregon and in the past have produced significant portions of domestic production. Mercury mining in Oregon has seen a pronounced cyclical activity, with mines opened up for relatively short periods during high mercury prices. Presently in an essentially dormant stage.
Machinery 30%, oil and gas 15%, transportation 15%, chemicals 15%, electrical 15% and other 10%.	Several types of molybdenum occur in Oregon. Most economic potential is the disseminated deposits in eastern Oregon in Baker and Grant Counties (Blue Mountains) and Harney County (Pueblo Mountains). Exports from the United States will continue to supply a major share of rest-of-world demand.
Transportation 24%, chemical industry 15%, electrical 9%, construction 9%, fabricated metal products 8%, petroleum 8%, household appliances 7%, machinery 7%, other 13%.	Oregon has substantial tonnages of low grade nickel laterite deposits. These await favorable market conditions for eventual development. Only one producing mine, located at Riddle, Oregon, produced nickel in the U.S. but recently ceased operation.

Table A-2. Mineral Commodity Summary (1987)[1] (continued)

Mineral Commodity	U.S. Production/Consumption Production In 1987	% of World Production	% Imported[2] (or Exported as noted)	Projected[3] Annual Demand Increase	Price Trends
Perlite	514,000 short tons	29%	6%	3%	Price per ton , f.o.b. mine: 1983 ($33.05), 1984 ($33.41), 1985 ($33.85), 1986 ($30.86), 1987 ($31.71)
Potassium (K_20 equivalent)	1,360,000 metric tons	4.7%	72%	1.80%	Per ton f.o.b. mine: 1983 ($100), 1984 ($109), 1985 ($96), 1986 (82), 1987 ($75)
Pumice and Pumicite	563,000 short tons	4.9%	38%	2%	Average price per ton f.o.b. mine or mill: 1983 ($9.99), 1984 (9.82), 1985 ($8.96), 1986 ($10.39), 1987 ($10.30)
Silver	38,000,000 troy ounces	8.8%	57%	0.8%	Average price per ounce: 1983 ($11.44), 1984 ($8.14), 1985 ($6.14), 1986 ($5.47), 1987 ($7.20)
Slab Lava	See separate discussion in preceding text.				
Sodium	Short tons: a. 8,500,000 sodium carbonate	95%	exported	1%	f.o.b. mine/plant per short ton: a. 1983 ($76.95), 1984 ($67), 1985 ($67.82), 1986 ($65.29) 1987 ($68)
	b. 360,000 sodium sulfate	16%	5%	1.40%	b. 1983 ($93.90), 1984 ($92.16), 1985 ($92.19), 1986 ($86.11), 1987 ($85.00)

Use and Percent of Consumption	Occurrences in Oregon
Lightweight building construction product 70%, filter aid 12%, other 18%.	There are, presently, no producing perlite mines in Oregon. In the 1940's, perlite was mined and processed in an integrated plant near Maupin, Wasco County. Nowadays, out-of-state perlite is expanded to form lightweight material in plants located in Portland. Exploration and large scale testing occurred in perlite-deposits of Southern Lake County in 1983.
Fertilizer 95%, chemical 5%.	No production is reported in Oregon. Environments favorable for potassium in Oregon are saline waters and ask-felspar in altered tuffaceous sediments.
Concentrate aggregates and building block, 90%	Pumice and pumicite occur in numerous Oregon locations. Large areas in central Oregon are blanketed by deposits. In 1983, Bend area produced pumice which was shipped to Washington and California markets for use as lightweight aggregates. Block pumice used in cleaning grills has higher unit prices and probably can bear shipping cost across nation.
Photography 45%, electrical and electronic products 26%, sterlingware, electroplated ware, and jewelry 13%, brazing alloys and solders 6%, other 10%	Approximately two-thirds of world silver resources are associated with copper, lead and zinc deposits. Remaining one-third is in vein deposits in which silver is principal metal. Oregon's silver has come from vein deposits, mostly gold-silver.
a. Glass 53%, chemicals 20%, soap and detergents 10%, water treatment 4%, other 13%.	Production of soda ash in Oregon has been limited to a few hundred tons. Principal deposits are associated with saline lakes, and playas such as Summer Lake, Lake Albert and Alkali Lake.
b. Pulp and paper 36%, detergent 46%, other 18%.	

Table A-2. Mineral Commodity Summary (1987)[1] (continued)

Mineral Commodity	U.S. Production/Consumption				Price Trends
	Production in 1987	% of World Production	% Imported[2] (or Exported as noted)	Projected[3] Annual Demand Increase	
Tin	negligible	negligible	73%	1%	Per pound N.Y. market: 1983 ($6.01), 1984 ($5.68), 1985 ($5.26), 1986 ($2.94), 1987 ($3.15)
Zeolites	See separate discussion in preceding text.				
Zinc	220,000 metric tons	3%	69%	2.5%	Average price cents per pound: 1983 (41.4¢), 1984 (48.6¢), 1985 (40.4¢), 1986 (38.0¢), 1987 (41.6¢)

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[1] For most of the nonfuel mineral commodities, production, use and trend data were obtained from U.S. Bureau of Mines, Mineral Commodity Data Summary, 1988. Unless specifically stated otherwise, Oregon data were generally derived from the U.S. Geological Survey, Mineral and Water Resources of Oregon, 1969. These sources have been supplemented whenever possible by newer data (published or unpublished) available at BLM offices. The energy mineral information is collected from diverse industry sources as reported in trade journals.
[2] Net import reliance as a percent of apparent consumption.
[3] Through 1990 from base year 1982 (bentonite) and 1983 (beryllium, boron, chromium, cobalt, copper, diatomite, flourite, gold, lead, lithium, manganese, mercury, molybdenum, nickel, perlite, potassium, pumice, silver, sodium carbonate, sodium sulfate, tin and zinc.)
[4] flask = 76 pounds
[5] 1987 data are estimated
[6] Changes in unreported investor stocks preclude calculation of a meaningful net import reliance.

W = Withheld to avoid disclosing company proprietary data

Use and Percent of Consumption	Occurrences in Oregon
Can and containers 17%, electrical 20%, construction 16%, transportation 14%, and other 33%.	Tin occurrence of any significance are not known in Oregon.
Galvanizing 50%, zinc base alloys 27%, brass and bronz 13%, other 10%.	Oregon's zinc production has been relatively small and has come mostly as a byproduct of copper mines.

While volcanic flows are widespread in eastern Oregon, economic deposits of slab lavas are generally limited to the geologically young basaltic fields. Diamond Craters, Jordan Craters, Clarks Butte, Devils Garden, Squaw Ridge, and Four Craters lava fields are known to contain slab lavas. (Diamond Craters has been withdrawn from mineral development; the others are WSAs.) These deposits probably could be developed economically and are the only known and accessible supplies in Oregon. The demand, however, has declined recently due to a slump in the building industry.

In 1978, one miner documented a sale of 324 tons of Idaho slab lava in the Oregon market.

Zeolites

Zeolites are a group of molecular-sieve minerals with great potential for varied uses. So far, however, natural zeolites only have a limited number of industrial uses. Petroleum refining, animal feed supplement and water purification seem to be the main uses in the U.S. at present.

Oregon has now joined the ranks of producing states. Zeolites produced from Adrian in east-central Oregon are marketed as a fungicide carrier for seed potatoes, and for uses in detergent and fertilizer markets. Significant numbers of mining claims for zeolites have been staked in eastern Oregon.

Prices for zeolites are not available, but are said to range widely depending on uses and the nature and purity of the zeolite mineral involved. Judging from the large companies which have mining claims for enormous reserves of zeolites in the western states, it appears that zeolites may be used in larger quantities in future years. Other technological research is necessary to increase the usefulness of natural zeolites and, consequently, future demand for this commodity is unknown.

Cinders

Cinder deposits occur in volcanic vent areas and are extensively used in road surfacing and as light weight aggregates. In many eastern Oregon localities, cinders are in demand as the principal source of low-priced road surfacing material. As low-priced commodities, cinders generally cannot be economically transported over long distances. In-place value of cinder deposits in 1983 ranged from $0.40 to $1.00 a ton. Production figures are not available, but demand is expected to increase.

Optical Calcite

Optical calcite is used as prisms for use in polarization of light. Industry has shown some interest in using optical calcite for the improvement of high technology lasers; however the projected future demand for this commodity is not known.

Optical calcite is known to occur in vein deposits in Malheur County near the Owyhee Reservoir area. Market and price data for this commodity are not available.

Limestone

Limestone is one of the most commonly used mineral commodities, and its uses are varied. Major uses are in the production of lime, cement, dimension stones, and in glass, metallurgical and chemical industries. About two-thirds of the limestone mined in the United States is used in construction, with a small amount used as an industrial filler. The supply of limestone is sufficient to meet regional needs in most areas of the country.

Economic recession has cut the annual production of limestone in the U.S. in recent years: 1980 (723); 1981 (644); 1982 (592) million short tons. Price data are unavailable.

Limestone is known to occur in WSAs in Baker County. Major production of limestone in Oregon is attributed to Baker County for manufacture of cement. Production figures have been withheld in order not to divulge proprietary data.

Energy Minerals

Energy minerals constitute the dominant source of domestic energy consumption. For instance, the energy consumption mix for February 1988 was petroleum, 39.5 percent; natural gas, 28.5 percent; coal, 21.9 percent; nuclear power, 6.6 percent; hydroelectric power, 3.3 percent; and others, 0.2 percent.

Increased energy costs due to 1973 and 1979 crude oil price hikes and the decline in the national economy have resulted in a slow rate of growth of energy consumption.

Oil: The United States is a major importer of crude oil. For March 1988, the U.S. imported nearly 7.036 million barrels of crude oil per day which was 42.7 percent of the daily demand. During the first half of

1988, the weekly average price of world export crude ranged from $13.46 to $15.70/bbl. It is predicted that prices will rise to around $17/bbl by early next year and remain at that level throughout 1989. The Energy Information Administration projects that domestic crude oil production will decline by 120,000 barrels per day in 1988 and by 230,000 barrels per day in 1989. This decline in production and the anticipated increase in demand is expected to result in the increase in net imports of petroleum products of more than 6 percent in 1988 and nearly 8 percent in 1989.

The Columbia Basin and high desert country in eastern Oregon are some of the frontier areas in the continental U.S. awaiting major exploration. Drilling in the Columbia Basin indicates good potential for hydrocarbon discovery.

Gas: The Gas Research Institute estimates that the demand for gas will grow from 17.6 quadrillion BTU in 1987 to 19.4 quads by 2010. Consumption is expected to increase at an average rate of 0.4 percent per year. The natural gas industry is promoting the use of gas in order to reduce the acceleration of the greenhouse effect from burning fossil fuels. Natural gas produces the lowest level of carbon dioxide emissions among fossil fuels.

Domestic natural gas production in March 1988 was estimated at 1,413 billion cubic feet. Production in 1987 from the Mist Gas field totalled 3.8 billion cubic feet (Bcf) down from the 4.6 Bcf produced in 1986. Gas production from the area is expected to increase in 1988 with the connection to gas pipeline of newly producing wells. Active drilling in the Columbia Basin indicates good potential for gas discovery.

Coal: The National Coal Association estimates domestic hard coal production for March 1988 at 84.963 million short tons. Subbituminous and lignite coal make up the majority of the known coal reserves found in Oregon and seam thickness is relatively thin, usually not more than three feet. The lignite deposits of northeast Oregon are an exception; some of those seams approach 40 feet in thickness. Government and industry efforts are on the rise to clean up U.S. air emissions from burning coal in the generation of electricity.

Geothermal: Geothermal resource contribution to national energy consumption was relatively minor. The Geysers field in California in 1983 had electricity generation capacity of over 1200 megawatts, and another 583 megawatts under construction.

In eastern Oregon, large quantities of geothermal resources are known or believed to exist. In order to minimize the loss of heat, geothermal energy is usually used near its occurrence. In Klamath Falls, Oregon, geothermal heat has been used for space heating over a number of years. Other communities in eastern Oregon also have, and are expanding the use of, geothermal resources for space heating, industrial processing and small wellhead generators.

Uranium: The domestic uranium industry suffered through another depressed year, however projection of world demand has become more optimistic. In 1985, for the first time since commercial uranium production began in the mid-1960s, reactor requirements for uranium exceeded the years production. Development of Placer Amex's uranium deposit near McDermitt in southeast Oregon (13 million tons of shallow mineralization of 0.05 percent to 0.06 percent uranium oxide) continues to be on hold. At the close of the year, prices of U3O8 per pound (in concentrates) were $27.00 in 1980, $23.50 in 1981, $20.25 in 1982, and $15.10 in June 1988. Past exploration in Oregon has been in Harney and Malheur counties.

Thorium: Thorium is derived from the processing of monazite, an ore mineral of rare earths and yttrium. The U.S. relies wholly on imports of thorium to supply domestic needs. Thorium is used as nuclear fuel in a commercial electric generating plant and in experimental reactors. Non-energy uses for this mineral include incandescent lamp mantles, magnesium-thorium alloys, refractories and welding rods, electrodes, and ceramics.

From a 1983 base, the demand for applications is anticipated to increase 3 percent annually through 1990. This increase is due to increased use of magnesium-thorium hardeners in the aerospace industry, thoria refractory applications and new catalytic processes. The quantity of thorium used for nuclear energy is small when compared to other fuels.

List of Principal Preparers

While individuals have primary responsibility for preparing sections of an EIS, the document is an interdisciplinary team effort. In addition, internal review of the document occurs throughout preparation. Specialists at the District, State Office and Washington Office levels of the Bureau and at the Department level both review the analysis and supply information. Contributions by individual preparers are subject to revision by other BLM specialists and by management during the internal review process.

Name	Primary Responsibility	Related Professional Experience
Volume I (Statewide EIS)		
Jerry Magee	EIS Team Leader Environmental Consequences for Watershed, Wildlife, Cultural, & Paleontological Resources	13 years BLM (State Office Environmental Coordinator, Outdoor Recreation Planner, Wilderness Specialist)
Dale Bays	Local Personal Income	16 years BLM (Regional Economist, Economist)
Dick Bonn	Affected Environment for Watershed, Wildlife	10 years BLM (Wildlife Biologist, Environmental Specialist) 11 years SCS (Biologist, Soil Conservationist)
Daniel Bowman	Affected Environment for Cultural & Paleontological Resources	11 1/2 years BLM (Policy Analyst, Social Scientist, Archeologist) 1 1/2 years Corps of Engineers (Archeologist)
Stanley C. Frazier	Local Personal Income	15 years BLM (Economist)
Gerry Fullerton	Livestock Grazing	27 years BLM (Range Conservationist, Environmental Specialist, Natural Resource Specialist)
L. D. Hamilton	Writer-Editor for Preliminary FEIS, Comment Analysis	8 years BLM (Outdoor Recreation Planner, Environmental Protection Specialist, Writer-Editor) 1 year BOR (Writer-Editor) 5 1/2 years BOR (Outdoor Recreation Planner)
Phil Hamilton	Interrelationships, Scoping Summary	32 years BLM (Supervisory Planning & Environmental Specialist, Economist-Planner, Realty Specialist, Forester and others)

Name	Primary Responsibility	Related Professional Experience
Dave Harmon	Wilderness Values, General Environment	12 years BLM (State Office Wilderness Coordinator) 2 years USFS (Forester) 2 years Western Wash. State College & Ore. State Univ. (Instructor, Wilderness Curriculum)
Kris Hegdal	Energy and Mineral Development	8 years BLM (Geologist) 3 years USFS (Geologist) 1 1/2 years Bureau of Mines (Engineering Technician)
Kathleen Helm	Writer-Editor for FEIS	9 years BLM (EA Writer, Writer-Editor), 6 years Dept. of Defense, BOR, and private agencies (Writer/Editor and Editorial Assistant)
Cheryl McCaffrey	Vegetation	8 years BLM (State Office Botanist, Eastern Ore. Zone Botanist, Biologist) 10 years as Botanist for Univ. of Georgia, the Nature Conservancy (consultant), NPS, and others
Gregg Simmons	Wood Products Harvest	14 years BLM (Environmental Coordinator, Forester)
Eric Stone	Consistency Tables, Utility Corridor Routing and Communication Facility Siting	20 years BLM (Program Analyst, Regional Planner, Natural Resource Specialist, Forester)
Ken White	Recreation Use	26 years BLM (Outdoor Recreation Planner, Realty Specialist)

Volume II (Appendices for WSAs prefixed OR-1)

Doug Troutman	Lakeview District Team Leader, Wilderness Values, Recreation Use	18 years as a Wilderness/ Recreation Specialist, Natural Resource Specialist, N.P.S. Ranger
Rick Breckel	Livestock Grazing	10 years BLM (Range Conservationist)
Bill Cannon	Cultural and Paleontological Resources	17 years as Archeologist
Virginia Crosby	Vegetation	7 years as Botanist

Name	**Primary Responsibility**	**Related Professional Experience**
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Ginger King	Vegetation	6 years as Botanist
Joe Kraanbrink	Livestock Grazing	7 years as Range Conservationist
Alan Munhall	Wildlife	9 years as Biologist
Dennis Simontacchi	Energy and Mineral Development	19 years as Geologist
Volume II (Appendices for WSAs prefixed OR-5)		
Brian Cunninghame	Prineville District Team Leader	19 years as Recreation Specialist and Natural Resource Specialist
Lyle Andrews	Livestock Grazing	11 years as Range Conservationist
Dean Bolstad	Livestock Grazing	11 years as Range Conservationist
Dennis Davis	Energy and Mineral Development	19 years as Geologist (14 years BLM, 5 years private industry.)
Ron Halvorson	Vegetation, Timber, and Writer/Editor	9 years as Range Conservationist 5 years as Natural Resource Specialist
Brad Keller	Wildlife	10 years as Wildlife Biologist
Earl McKinney	Livestock Grazing	20 years as Range Conservationist
Roy Pearl	Recreation	21 years as Forester, Environmental Coordinator, and Natural Resource Specialist
Berry Phelps	Wilderness Values	10 years as Wilderness Specialist, Recreation Planner, and Natural Resource Specialist
Ken Primrose	Livestock Grazing	13 years as Range Conservationist
Suzanne Thomas	Cultural	12 years as Archaeologist
Volume II (Appendix for WSA OR-11-17)		
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Art Carpenter	Wood Products, Vegetation	26 years BLM (Forester)
Lyman Deich	Cultural Resources	12 years BLM (Archeologist)
Dave Kelly	Livestock Grazing	11 years BLM (Range Conservationist)
Jim Renthal	Soils, Water Quality	12 years BLM (Soil Scientist, Assistant Area Manager)
Gayle Sitter	Wildlife	10 years BLM (Wildlife Biologist)
Rich Whitley	Livestock Grazing	12 years BLM (Range Conservationist, Natural Resource Specialist)

Volume II (Appendix for WSAs OR-12-8 and OR-12-14)

Name	Primary Responsibility	Related Professional Experience
Reginald Pullen	Coos Bay District Team Leader, All Sections	13 years BLM (Archeologist and Recreation Planner)
Randy Wenchell	All Sections	9 years BLM (Landscape Architect) Colorado Dept. of Wildlife and private industry

Volume III (Appendices for WSAs prefixed OR-2)

Name	Primary Responsibility	Related Professional Experience
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Liz Appelman	Lead Writer/Editor	3 years Clerk-typist, 1 year Editorial Assistant
Mark Armstrong	Technical Review	15 years BLM (Range Conservationist) 3 years Natural Resource Specialist 2 years Public Affairs Officer and Environmental Coordinator
Roger Britton	Energy and Mineral Development	5 years Soil Scientist (3 years SCS, 2 years BLM) 4 years BLM Surface Protection Specialist 4 years BLM Geologist
Bruce Crespin	Cultural Resources	12 years Archeologist (11 years BLM, 1 year California State Dept. of Parks and Recreation)

Name	**Primary Responsibility**	**Related Professional Experience**
Rick Hall	Watershed and Vegetation	8 years Range Conservationist, 3 1/2 years as Natural Resource Specialist
JoMarie Hile	Wilderness Values and Co-lead Writer/Editor	2 1/2 years BIA (Land Use Planner) 2 1/2 years LCDC (Administrative Assistant) 1 year BLM (Lead Writer/Editor)
Everett Lofgren	Livestock Grazing	13 years BLM (Range Conservationist)
Fred McDonald	Recreation Use	11 years Recreation Technician and Outdoor Recreation Planner
Guy Sheeter	Wildlife Values	19 years BLM (Wildlife Biologist) 1 year Range Conservationist
Dave Vickstrom	Wilderness Values and Co-Lead Writer/Editor	15 years BLM (Outdoor Recreation Planner) 6 years NPS (Park Ranger)

Volume IV (Appendices for WSAs prefixed OR-3 and OR-6)

Richard Conrad	Vale District Team Leader	17 years BLM (Wilderness Specialist, Outdoor Recreation Planner and Desert Ranger)
Bob Alward	Wilderness Values Recreation Use Coordination	4 years National Park Service 14 years BLM (Recreation Planner)
Jim Berka	Forestry	19 years BLM (Forester)
John Denney	Watershed	11 years Natural Resource Specialist
Tom Dew	Wilderness Values Public Comment Analysis Recreation Use Coordination	14 years Outdoor Recreation Planner
Randy Eyre	Livestock Grazing	10 years Range Conservationist
Jean Findley	Vegetation	11 years BLM (Range Conservationist) 1 year Botanist
Lynne Forre	Word Processing	3 years Resource Area Secretary 3 years Editorial Assistant 1 year Resource Assistant
Joseph Furnish	Wilderness Values Public Comment Analysis Recreation Use Coordination	2 years Resource Management 10 years Aquatic Ecology Research 1 year Wilderness Technician

Name	Primary Responsibility	Related Professional Experience
Bill Holsheimer	Energy and Mineral Development	17 years BLM (Geologist)
Matt Kniesel	Wildlife	15 years Wildlife Biologist
Ralph Kuhns	Energy & Mineral Development	4 years Contract Geologist 12 years BLM (Geologist)
Chris Latt	Wilderness Values Recreation Use Coordination	2 1/2 years Forest ecology research 2 years Forest Management 1 1/2 years Recreation Technician
Gene McLaughlin	Livestock Grazing	5 years SCS (Range Conservationist) 10 years BLM (Range Conservationist)
Michelle McSwain	Watershed	2 years Coop-Ed. Student 2 years Hydrologist
Gerald Meyer	Wilderness Values Recreation Use Coordination	17 years BLM (Recreation Specialist)
Mary Oman	Cultural Resources	6 years BLM (Archeologist)
Bonnie Rosen	Word Processing	3 years Word Processor 1 year Resource Assistant
Jon Sadowski	Wildlife	13 years BLM (Wildlife Biologist) 2 years Range Conservationist
Diane Zaugg	Word Processing	1 1/2 years clerk/typist

Glossary

Acronyms

ACEC - Area of Critical Environmental Concern

ACMP - Area of Critical Mineral Potential

AUM - Animal Unit Month

BLM - Bureau of Land Management

CFL - Commercial Forest Land

EIS - Environmental Impact Statement

FLPMA - Federal Land Policy and Management Act of 1976

FS- Forest Service

FWS - Fish and Wildlife Service

GEM - Geology, Energy and Minerals Assessment

GRA - Geology-Energy-Mineral Resource Area

KGRA - Known Geothermal Resource Area

MFP - Management Framework Plan

NPS - National Park Service

NWPS - National Wilderness Preservation System

ORV - Off-Road Vehicle

RARE II - The second Roadless Area Review and Evaluation

RMP - Resource Management Plan

RNA - Research Natural Area

RVD - Recreation Visitor Day

SMSA - Standard Metropolitan Statistical Area

VRM - Visual Resource Management

WSA - Wilderness Study Area

Definitions

Animal Unit Month (AUM): The amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month.

Allotment: An area of land where one or more livestock operators graze their livestock. Allotments generally consist of public lands administered by the BLM, but may include other federally-managed, state owned or private lands. An allotment may include one or more separate pastures. Livestock numbers and periods of use are specified for each allotment where BLM controls use.

Allotment Management Plan (AMP): A documented program which applies to livestock operations on the public lands, prepared in consultation, cooperation, and coordination with the permittees, lessees, or other involved affected interests.

Areas of Critical Environmental Concern (ACEC): Areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Area of Critical Mineral Potential (ACMP): An area nominated by the public as having mineral potential that is important to the local, regional, or national economy or that could become important in the future. These nominations are used by BLM to reevaluate areas under existing or "de facto" withdrawals (from mineral entry).

Board Feet: Units of solid wood, one foot square and one inch thick.

Candidate Species: Plant or animal species not yet officially listed but which are undergoing a status review as published in the Federal Register by the U.S. Fish and Wildlife Service. They are candidates for possible addition to the List of Endangered and Threatened Species. (See also Endangered Species and Threatened Species.)

Casual Use: Casual use operations are those that cause negligible surface disturbance and that do not use explosives, mechanized earthmoving equipment, or off-road vehicles (ORV) in areas closed to ORV use. Casual use in designated wilderness areas consists of operations resulting in negligible surface disturbance and that do not make use of motorized equipment, mechanical transport, landing of aircraft or use of explosives. The operator is not required to contact the BLM prior to or after conducting casual use operations, but must take all steps necessary to prevent unnecessary or undue degradation.

Chaining: A method of vegetation manipulation consisting of dragging an anchor chain through vegetation to break off or uproot shrubs or trees.

Commercial Forest Land (CFL): Forest land that is capable of producing merchantable timber at rates of at least 20 cubic feet per acre per year and is currently or prospectively accessible and not withdrawn from such use.

Dead-End Road: A road (see Road definition) that extends into a WSA but is excluded from the WSA by means of drawing the WSA boundary around the road.

Discovery: A term used in connection with mining claims. As stated in a legal ruling which has been upheld in many later decisions, it is "where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine ... ."

Ecological Status: The present state of vegetation of a range site in relation to the potential natural community for the site. Ecological status is use independent. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a community resemble that of the potential natural community. The four ecological status classes correspond to 0-15, 26-50, 51-75, or 76-100 percent similarity to the potential natural community and are called early seral, mid seral, late seral, and potential natural community, respectively.

Economic Value: As used in this EIS, refers to the contribution of a resource use on the public lands to net production. (See also Addendum 1 discussion.)

Ecosystem: A complex self-sustaining natural system which includes living and non-living components of the environment and the interactions that bind them together. Its functioning involves the circulation of matter and energy between organisms and their environment.

Endangered Species: Any species in danger of extinction throughout all or a significant portion of its range, as identified in accordance with the Endangered Species Act of 1973, as amended.

Endemic: In terms of a specific organism, the condition where the organism's natural occurrence is confined to a certain region and its distribution is relatively limited.

FLPMA: The Federal Land Policy and Management Act of 1976 (Public Law 94-579, 90 Stat. 2743, 43 USC 1701).

Forage: All browse and herbaceous foods that are available to grazing animals. It may be grazed or harvested for feeding.

Forage Utilization: The proportion or degree of current year's forage production that is consumed or destroyed. May refer either to a single plant species, a group of species, or to the vegetation as a whole. Utilization is synonymous with use.

Guzzler: A small, wildlife water project that utilizes a water collection system.

Habitat: All elements of an organism's environment needed to complete its life cycle through reproduction, including but not limited to food, cover, water and living space in the amounts, qualities and locations which the organism requires to complete its life cycle.

Impact: The effect, influence, alteration, or imprint of an activity.

Impair: To diminish in value or excellence.

Impair Wilderness Suitability: Refers to activities that are considered to impair an area's suitability for preservation as wilderness - i.e., that do not satisfy the "nonimpairment criteria" set forth in Chapter I.B.2 of the Interim Management Policy (BLM, December 12, 1979).

Imprints: Signs of human activities, past or ongoing.

Inholdings: As used in this EIS, parcels of land with surface or mineral rights held privately or administered by a non-BLM agency that are entirely surrounded by WSA lands. Similar parcels adjoining or traversed by a dead-end road (see Dead-End Road) are not considered inholdings as they are excluded, along with the dead-end roads, from the WSA boundary.

Instant Study Area: A BLM primitive or natural area designated before November 1, 1975, subject to wilderness review under section 603(a) of FLPMA.

Known Geothermal Resource Area (KGRA): An area in which the geology, nearby discoveries, competitive interests, or other indicia would, in the opinion of the Secretary of the Interior, engender a belief in persons who are experienced in the subject matter that the prospects for extraction of geothermal steam or associated geothermal resources are good enough to warrant expenditures of money for that purpose. (From Code of Federal Regulations (Title 43, Part 1000 to 3999, Pg. 436), Office of Federal Register, Washington D.C. 1981.)

Leasable Minerals: Those minerals subject to lease by the Federal Government. Includes oil and gas, coal, geothermal, phosphate, sodium, potash, and oil shale.

Local Personal Income: As used in this EIS, refers to income to people living within the region that is derived from use of the public lands. (See also Addendum 1.)

Locatable Minerals: Minerals subject to disposal and development through the Mining Law of 1872 (as amended). Generally includes metallic minerals such as gold and silver and other materials not subject to lease or sale.

Manageability: With respect to wilderness, the capability of an area to be effectively managed to preserve its wilderness character.

Management Framework Plan (MFP): Land use plan for public lands that provides a set of goals, objectives, and constraints for a specific planning unit to guide the development of detailed plans for the management of each resource. The planning process is divided into three steps. Specialists prepare management recommendations for their respective resources in step one. The manager, through a conflict resolution process, develops a proposed plan from the recommendations in step two. The final decision to adopt a plan is made in step three.

MFP Amendment: An amendment to a Management Framework Plan is initiated by the need to consider monitoring and evaluation findings, new data, or new or revised policy, a change in circumstances, or an applicant's proposed action which may result in a significant change in a portion of the approved plan.

Mineral Deposit: A body of mineral matter in or on the earth's surface which may be utilized for its industrial mineral or metal content.

Mineral Entry: The right to enter the public lands (under the administration of the BLM) to search for minerals and to claim or lease such minerals under the mining and mineral leasing laws and regulations.

Mineral Estate: The ownership of the minerals under a given surface. Ownership of the minerals may be separate from the surface ownership (see split-estate).

Mineral Potential: In the BLM classification system, potential refers to potential for the presence (occurrence) of a concentration of one or more energy and/or mineral resources. It does not refer to or imply potential for development and/or extraction of the mineral resource(s). It does not imply that the potential concentration is or may be economic, i.e. could be extracted profitably.

Mineral Potential Classification: A classification system used to indicate geologic favorability, or potential for occurrence, for various energy and mineral resources. The system rates the commodities as having no (0), low (L), moderate (M), or high (H) favorability and applies a confidence rating (from A, lowest to D, highest level of confidence) based on the amount and quality of information and evidence available in determining favorability.

Mitigation Measures: Methods or procedures which reduce or lessen the impacts of an action.

Mortality Salvage: Removal of individual trees killed or injured by fire, insects, disease, etc., and the removal of those trees likely to die prior to final harvest cut so as to utilize merchantable material.

Motorized Equipment: Any machine activated by nonliving power source except small battery-powered, handcarried devices such as flashlights, shavers, Geiger counters and cameras.

Motor Vehicle: Any vehicle which is self-propelled or any vehicle which is propelled by electric power obtained from batteries.

Multiple Use: "...the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output." (From section 103, FLPMA.)

Naturalness: Refers to an area which "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." (From section 2(c), Wilderness Act.)

Nonstructural Projects: Livestock and wildlife projects that do not involve construction of facilities. These projects primarily involve land and vegetative treatments, such as chaining, burning, seeding and spraying.

Nonsuitable for Preservation as Wilderness: Refers to a recommendation that certain Federal lands satisfy the definition of wilderness in the Wilderness Act but have been found not to be appropriate for designation as wilderness on the basis of an analysis of the existing and potential uses of the land.

Old-Growth Timber: A stand of trees that is overmature, usually 200 year age class or older (large trees, snags and down logs, multi-layered canopy, many species).

Off-Road Vehicle (ORV): Any motorized vehicle designated for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland or other terrain.

Outstanding: 1. standing out among others of its kind; conspicuous; prominent. 2. superior to others of its kind; distinguished; excellent.

Outstanding Natural Area: An area of unusual natural characteristics where management of recreation activities is necessary to preserve those characteristics.

Patented Mining Claim: A claim on which title has passed from the Federal Government to the mining claimant under the mining laws.

Permit/Lease (Grazing): Under Section 3 of the Taylor Grazing Act, a permit is a document authorizing use of public lands within grazing districts for the purpose of grazing livestock. Under Section 15 of the Taylor Grazing Act, a lease is a document authorizing livestock grazing use of public lands outside grazing districts.

Planning Area: The area for which resource management plans are prepared and maintained. In most instances, it is the same as the resource area, which is a geographic portion of a BLM district, under supervision of an area manager.

Planning Criteria: The factors used to guide development of the resource management plan, or revision, to ensure that it is tailored to the issues previously identified and to ensure that unnecessary data collection and analyses are avoided. Planning criteria are developed to guide the collection and use of inventory data and information, the analysis of the management situation, the design and formulation of alternatives, the estimation of the effects of alternatives, the evaluation of alternatives, and the selection of the preferred alternative.

Plants of Special Interest: As used in this EIS, refers to plants federally listed as threatened or endangered, candidates for such federal listing, and plants on lists 1 and 2 of the Oregon Natural Heritage Plan's "Rare, Threatened, and Endangered Plants and Animals of Oregon."

Population Center: A Standard Metropolitan Statistical Area (SMSA) which has a population of 100,000 or greater. An SMSA is a county which contains at least one city of 50,000 inhabitants or more plus as many adjacent counties as are metropolitan in character and are socially integrated with that central city or cities.

Post-FLPMA: The period of time after the enactment of the Federal Land Policy and Management Act (October 21, 1976). Pre-FLPMA: On or before October 21, 1976.

Potential Natural Community (PNC): The biotic community (potential natural plant community and wild animal community) which would become established if all successional sequences were completed without human interference under the present environmental conditions.

Preliminary Wilderness Recommendation: Refers to a wilderness recommendation at any stage prior to the time when the Secretary of the Interior reports a recommendation to the President. Until the Secretary acts, the recommendation is "preliminary" because it is subject to change during administrative review.

Primitive Area: A designation used by the BLM for an area that is composed of natural, undeveloped lands that are essentially unaffected by civilization and located where the natural environment can be preserved by management of recreation activities and exclusion of additional roads and commercial development.

Primitive and Unconfined Recreation: Nonmotorized and nondeveloped types of outdoor recreational activities.

Public Lands: Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except (1) lands located on the Outer Continental Shelf and (2) lands held for the benefit of Indians, Aleuts and Eskimos.

Public Land Order: An order creating, continuing (extending), modifying or revoking a withdrawal, and signed by an appointed, Senate-confirmed official of the Office of the Secretary of the Interior.

Quality Standards: A set of six analysis and documentation standards established to foster consistency in documenting the rationale for wilderness recommendations and to ensure that other resource considerations are adequately addressed in wilderness EISs. Most of these standards are part of the general standards used for multiple use planning. The quality standards specify consideration of energy and mineral resource values, impacts of wilderness designation on other resource values, impact of non-designation on wilderness values, public comment, local social and economic effects of wilderness designation, and consistency with other plans.

Range Improvement: Any activity on or relating to rangelands designed to improve production of forage, change vegetation composition, control pattern of use, provide water, stabilize soil and water conditions, and enhance habitat for livestock, fish, wildlife, and wild horses and burros.

Recreation Visitor Day (RVD): A 12-hour period spent in recreation activities by one or more individuals in a public land area. The time may be spent, for example, by one individual for 12 hours or three individuals for 4 hours each. This unit helps to calculate recreation use.

Research Natural Area (RNA): A naturally occurring physical or biological unit where natural conditions are maintained insofar as possible. Further, the natural features are preserved for research and educational purposes. The features to be preserved may be important or unique ecosystems, habitats or organisms, and may be terrestrial, freshwater or marine.

Resource Management Plan (RMP): The basic decision document of BLM's resource management planning process, used to establish allocation and coordination among uses for the various resources within a Resource Area. An RMP is a "land-use plan" prescribed by Section 202 of the Federal Land Policy and Management Act. The RMP regulations appear at 43 CFR 1601. (Refer to definition of "Management Framework Plan".)

Riparian: Situated on or pertaining to the bank of a river, stream or other body of water. Normally used to refer to plants of all types that grow along streams or around springs.

Road: A vehicle route which has been improved and maintained by mechanical means to ensure relatively regular and continuous use.

Roadless: For the purpose of the wilderness review program, this refers to the absence of roads which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. A way maintained solely by the passage of vehicles does not constitute a road.

Words and phrases used in the above definition of "roadless" are defined as follows:

1. Improved and maintained: Actions taken physically by man to keep the road open to vehicular traffic. "Improved" does not necessarily mean formal construction. "Maintained" does not necessarily mean annual maintenance.

2. Mechanical means: Use of hand or power machinery or tools.

3. Relatively regular and continuous use: Vehicular use which has occurred and will continue to occur on a relatively regular bases. Examples are: Access roads for equipment to maintain a stock water tank or other established water sources; access roads to maintained recreation sites or facilities; or access roads to mining claims.

Scoping Session: An early and open process for determining the significant issues related to a proposed action which are to be addressed in the environmental impact statement.

Segregation: Any action such as a withdrawal or allowed application (exchange) that suspends the operation of the general public land laws. To separate or set apart; to remove lands from the operation of part or all of the public land and mineral laws.

Sensitive Species: Those species that have appeared in the Federal Register as proposed for classification and are under consideration for official listing as endangered or threatened species, that are on an official State list, or that are recognized by the State Director as needing special management to prevent their being placed on Federal or State lists.

Seral (Successional) Stage: See definition under "Ecological Status."

Solitude: 1. The state of being along or remote from habitations; isolation. 2. a lonely, unfrequented, or secluded place.

Special Features: Features that may be present in an area under consideration for wilderness, such as ecological, geological or other features of scientific, educational, scenic or historical value. They are not required for wilderness designation, but their presence will enhance an area's wilderness quality.

Split Estate: Land ownership status whereby the surface rights are held by one individual or entity and the subsurface or mineral rights by another. As used in this EIS, split-estate lands are those lands in which the surface is Federally owned but some or all of the minerals are not Federally owned.

Standard Metropolitan Statistical Area (SMSA): See definition under "Population Center."

Strategic and Critical Minerals: Materials needed to supply the military, industrial and essential civilian needs of the United States during a national defense emergency and are not found or produced in this country in sufficient quantities to meet such needs.

Structural Projects: Projects involving structural development (i.e., fencelines, pipelines, troughs, guzzlers and wells) to enhance conditions for livestock, wildlife, fish, or wild horses and burros.

Substantially Unnoticeable: Refers to something that either is so insignificant as to be only a very minor feature of the overall area or is not distinctly recognizable by the average visitor as being made or caused by human activity because of age, weathering or biological change. An example of the first would be a few minor dams or abandoned mine buildings that are widely scattered over a large area, so that they are an inconspicuous part of the scene. Serious intrusions of this kind, or many of them, may preclude inclusion of the land in a wilderness study area. An example of the second would be an old juniper control project that has grown up to a natural appearance, the old fallen trees largely decomposed.

Suitable for Preservation as Wilderness: Refers to a recommendation that certain Federal lands satisfy the definition of wilderness in the Wilderness Act and have been found appropriate for designation as wilderness on the basis of an analysis of the existing and potential uses of the land.

Thousand Board Feet (Mbf): See Board Feet.

Threatened Species: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and which has been designated in the Federal Register by the Secretary of the Interior as a threatened species. Also includes species categorized as rare, very rare, or depleted.

Valid Existing Rights: Rights which exist prior to a management action and take precedence over the action. In mining, valid existing rights result from the discovery of a valuable mineral deposit.

Valid Mining Claim: A mining claim on which a discovery has been made. (See "discovery.")

Vegetation Manipulation: As used in this EIS, refers to seeding and brush control projects for livestock and wildlife.

Viewshed: A total landscape seen or potentially seen from specific points on a logical part of a travel route or water body.

Visual Resource Management (VRM) Classes: A BLM classification system containing specific objectives for maintaining or enhancing visual resources, including the kinds of structures and modifications acceptable to meet established visual goals.

Way: A vehicle route which has not been improved and maintained by mechanical means to ensure relatively regular and continuous use.

Wilderness Area: An area formally designated by Act of Congress as part of the National Wilderness Preservation System.

Wilderness Characteristics: Key characteristics of a wilderness listed in section 2(c) of the Wilderness Act of 1964 and used by BLM in its wilderness inventory. These characteristics include size, naturalness, outstanding opportunities for solitude, outstanding opportunities for primitive or unconfined recreation, and special features.

Wilderness Management: The management of lands which have been designated by Act of Congress as wilderness areas.

Wilderness Recommendations: A recommendation by the Bureau of Land Management, the Secretary of the Interior, or the President, with respect to an area's suitability or nonsuitability for preservation as wilderness.

Wilderness Reporting: The process of preparing the reports containing wilderness recommendations on wilderness study areas and transmitting those reports to the Secretary of the Interior, the President and Congress.

Wilderness Review: the term used to cover the entire wilderness inventory, study and reporting phases of the wilderness program of the Bureau of Land Management.

Wilderness Study Area: A roadless area or island that has been inventoried and found to have wilderness characteristics as described in section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

Wilderness Values: See Wilderness Characteristics.

Wildlife Habitat Improvement: Any procedure or activity designed to maintain or improve aquatic or terrestrial habitat, including but not limited to seeding and other methods of vegetative management, water development, fence construction and/or modification, and installation of in-stream structures.

Withdrawal: Removal, or withholding, of public lands by statute, or Secretarial order, from operation of some or all of the public land laws ("surface", mining and/or mineral leasing laws).

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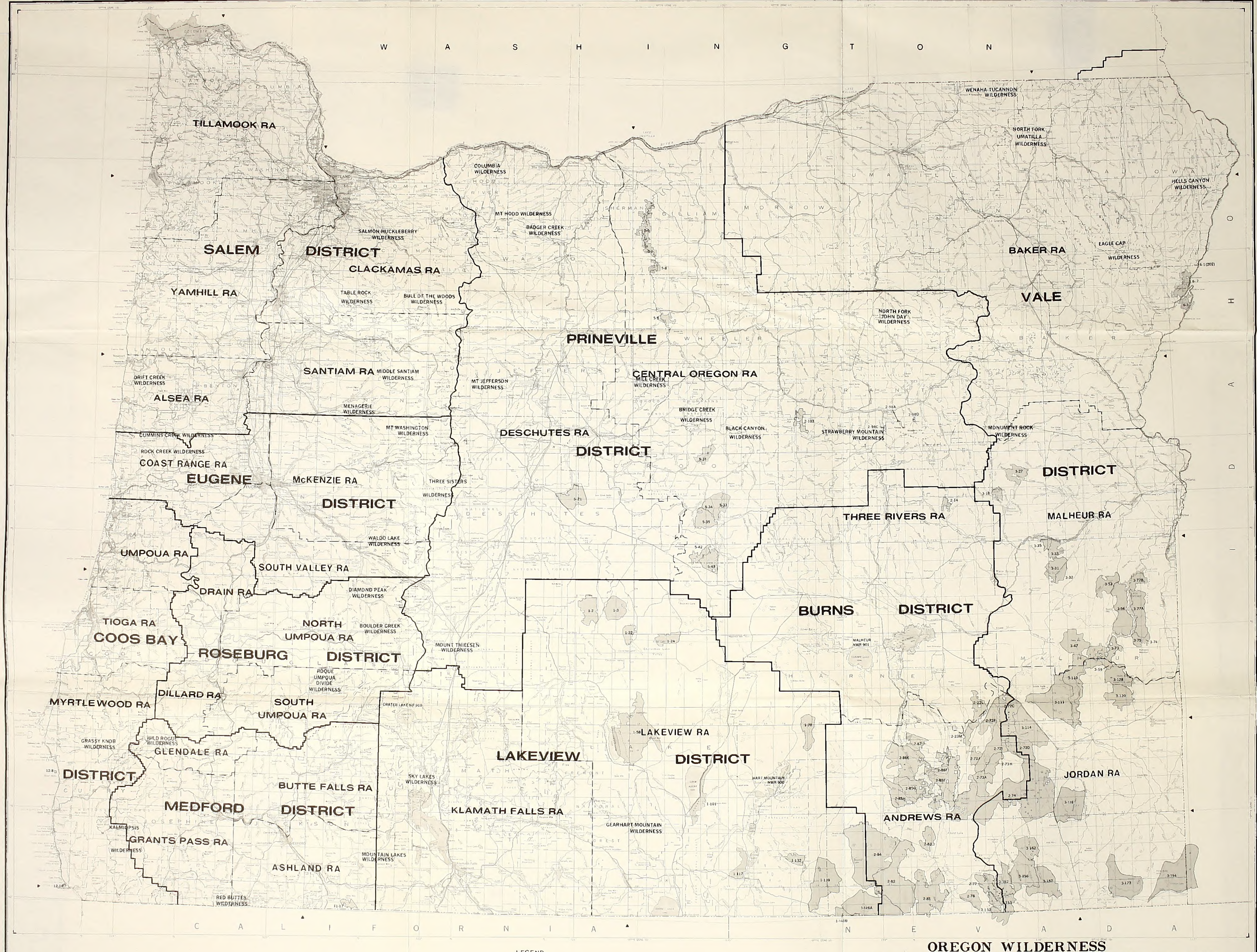

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Note: WSA-specific maps are located in each appendix

OREGON WILDERNESS
ENVIRONMENTAL IMPACT STATEMENT

WILDERNESS STATUS MAP

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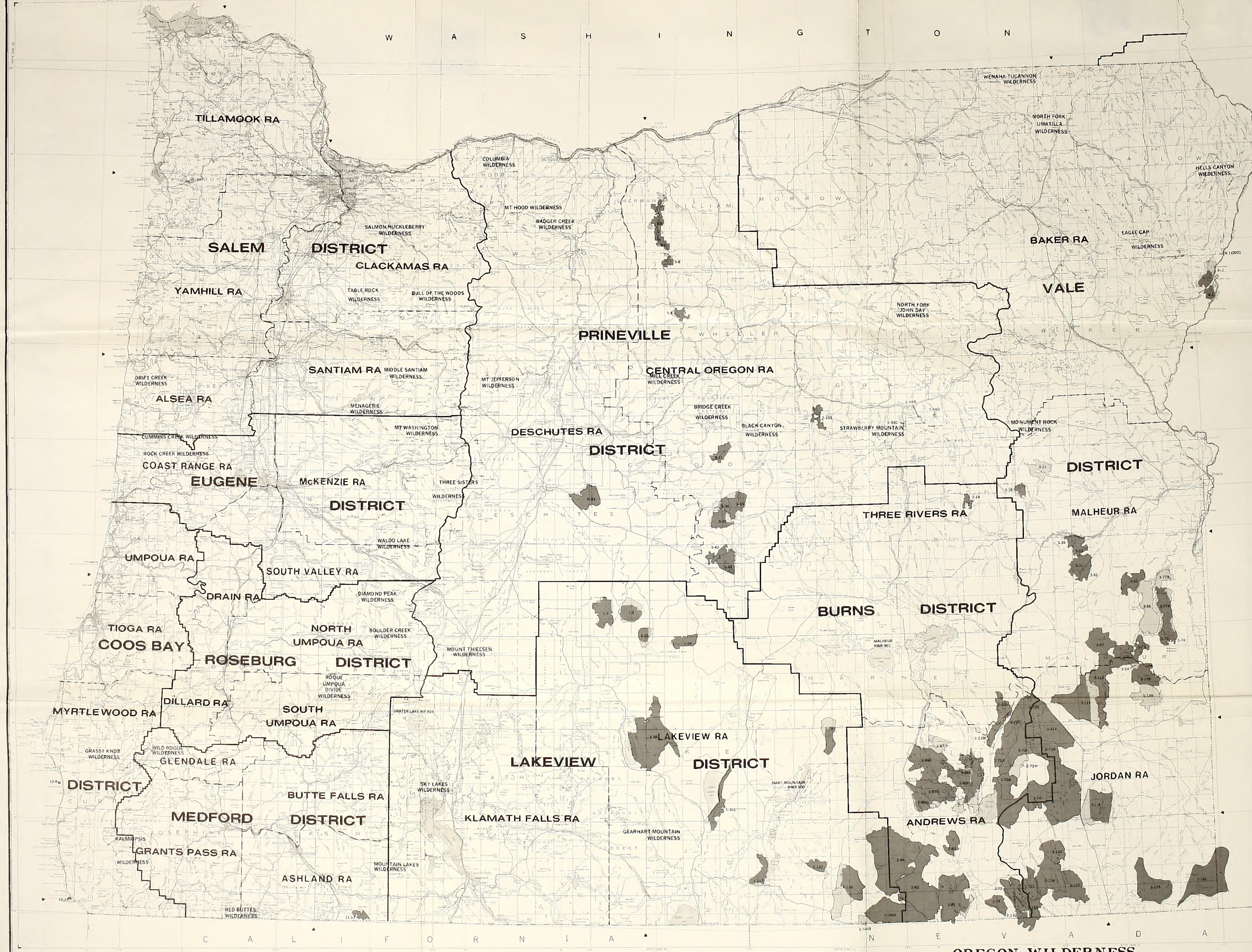

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OREGON WILDERNESS ENVIRONMENTAL IMPACT STATEMENT

WILDERNESS EMPHASIS ALTERNATIVE

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MAP 2

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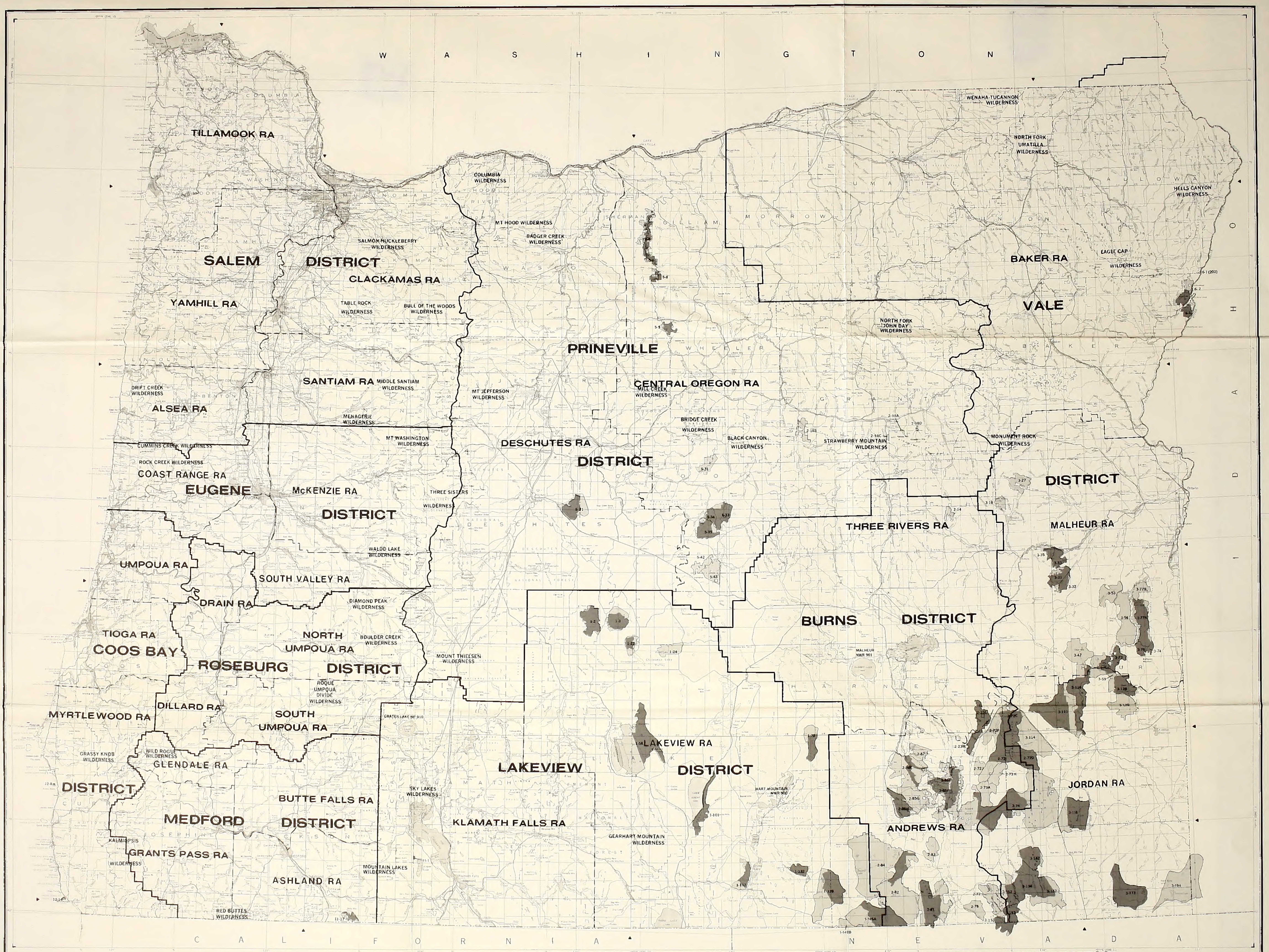

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▨ Area Recommended Suitable for Wilderness Designation

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OREGON WILDERNESS ENVIRONMENTAL IMPACT STATEMENT

CONFLICT RESOLUTION EMPHASIS ALTERNATIVE

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MAP 3

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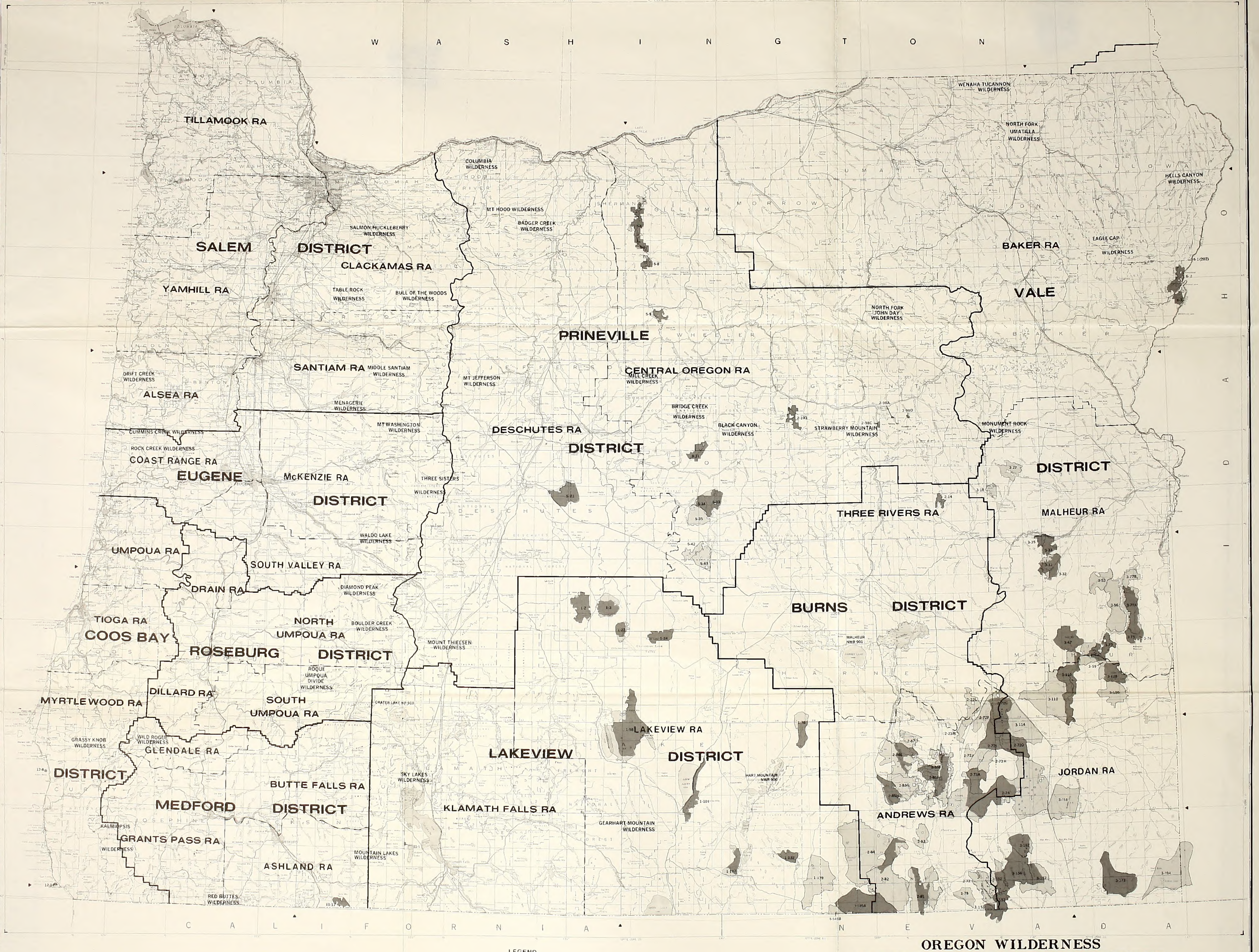

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▨	Area Recommended Suitable for Wilderness Designation

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OREGON WILDERNESS
ENVIRONMENTAL IMPACT STATEMENT

ECOSYSTEM DIVERSITY EMPHASIS ALTERNATIVE

1989

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MAP 4

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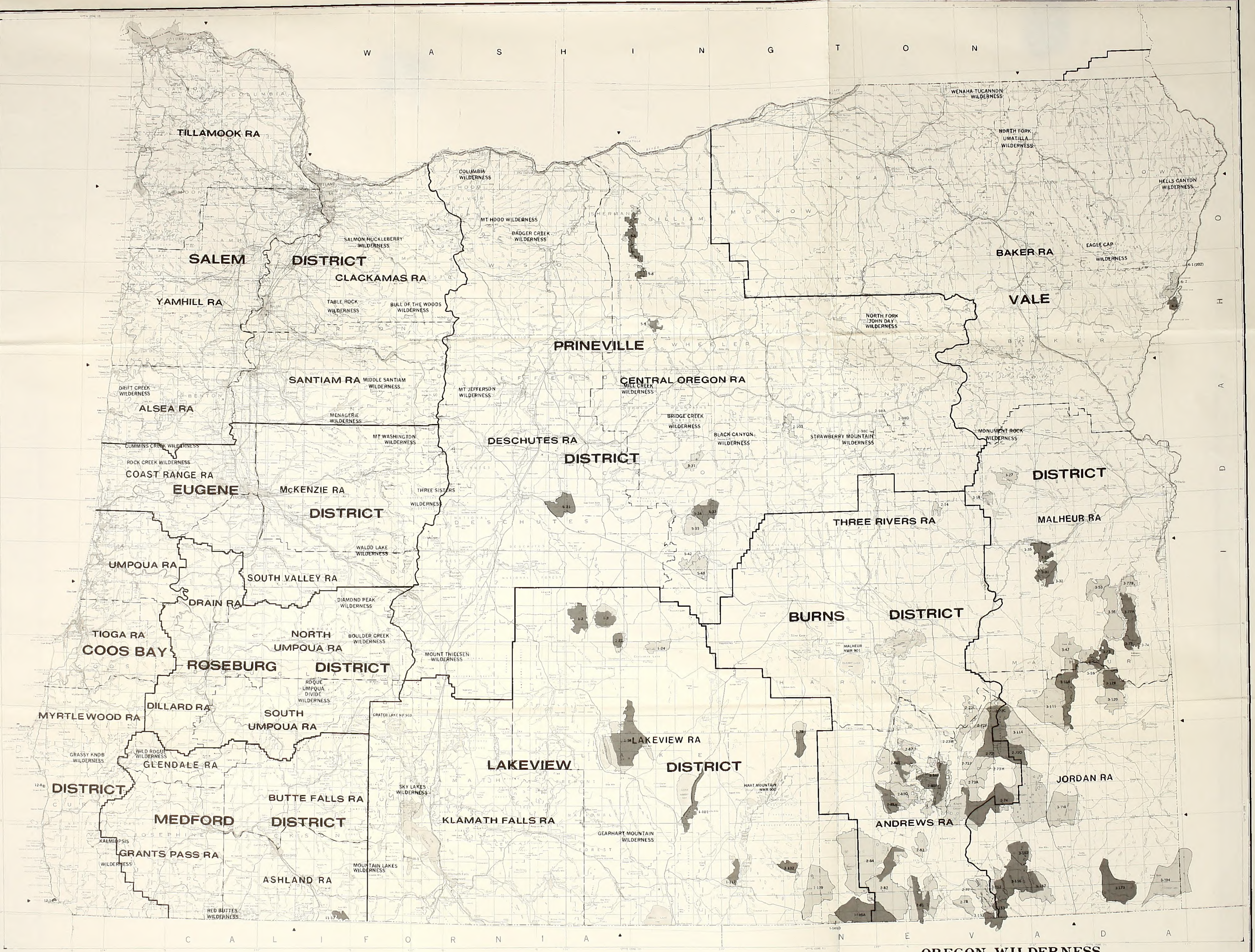

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▨ Area Recommended Suitable for Wilderness Designation

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OREGON WILDERNESS ENVIRONMENTAL IMPACT STATEMENT

PROPOSED ACTION

1989

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MAP 5

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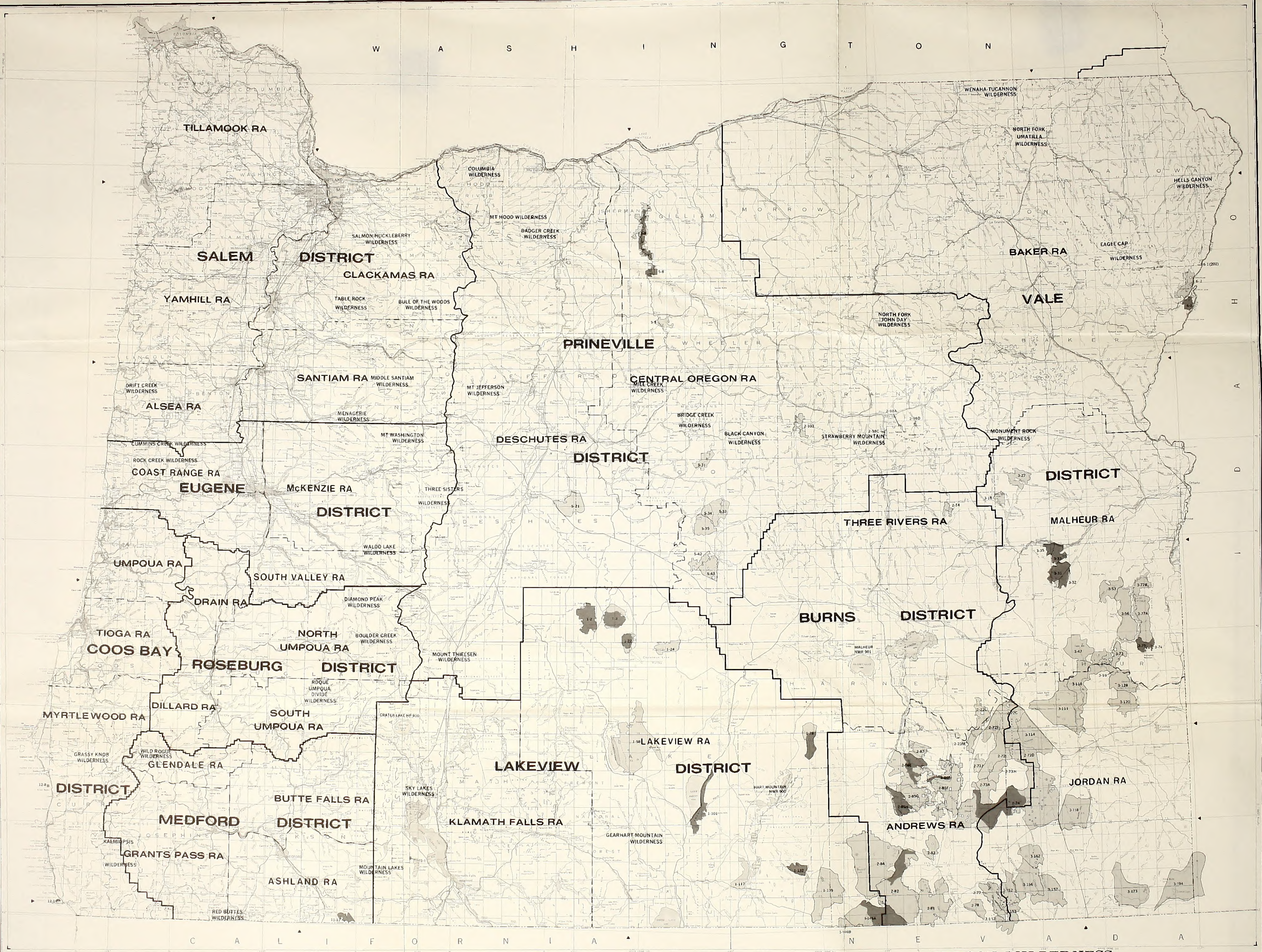

LEGEND

░	WSA Under Study in this EIS
▓	Area Recommended Suitable for Wilderness Designation

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OREGON WILDERNESS ENVIRONMENTAL IMPACT STATEMENT

COMMODITY DEVELOPMENT EMPHASIS ALTERNATIVE

1989

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MAP 6

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

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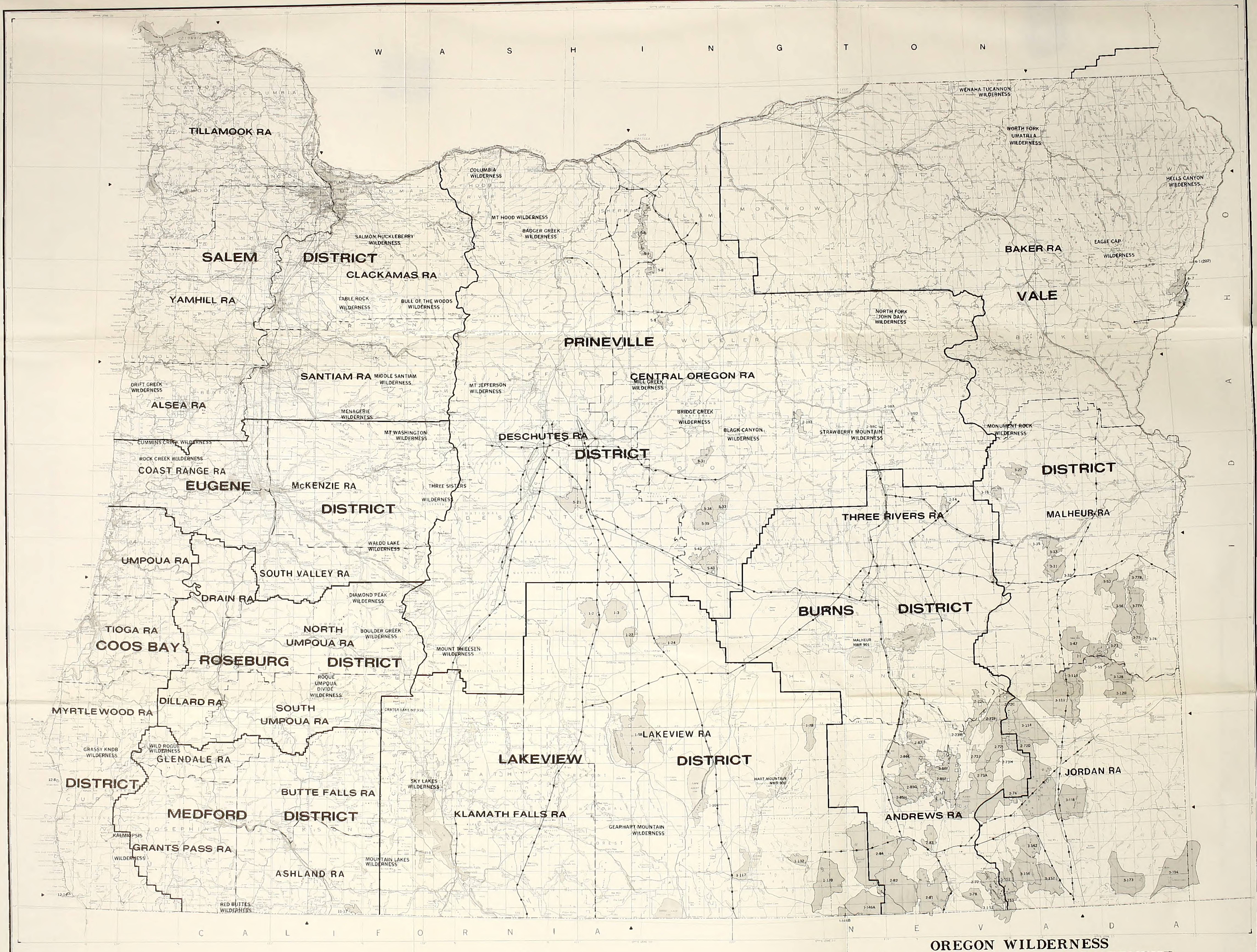

LEGEND

▨ WSA Under Study in this EIS

•——• Existing Utility Corridors

•— —• Proposed Utility Corridors

Note: WSA-specific maps are located in each appendix

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OREGON WILDERNESS ENVIRONMENTAL IMPACT STATEMENT

EXISTING AND PROPOSED UTILITY CORRIDORS IN OR NEAR THE WSAs

1989

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MAP 7

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

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